

REPORT  
ON THE  
HEALTH OF THE CITY  
OF  
BIRMINGHAM,  
FOR THE YEAR 1889,  
ALSO,  
ON THE PROCEEDINGS TAKEN UNDER THE ACT FOR THE  
PREVENTION OF ADULTERATION  
OF ARTICLES OF FOOD AND DRINK,

BY  
ALFRED HILL, M.D., F.I.C.,

*Past-President of the Society of Medical Officers of Health;*

*Past-President of the Society of Public Analysts;*

*Fellow of the Sanitary Institute;*

MEDICAL OFFICER OF HEALTH AND ANALYST TO THE CITY.

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PRINTED BY ORDER OF THE HEALTH COMMITTEE

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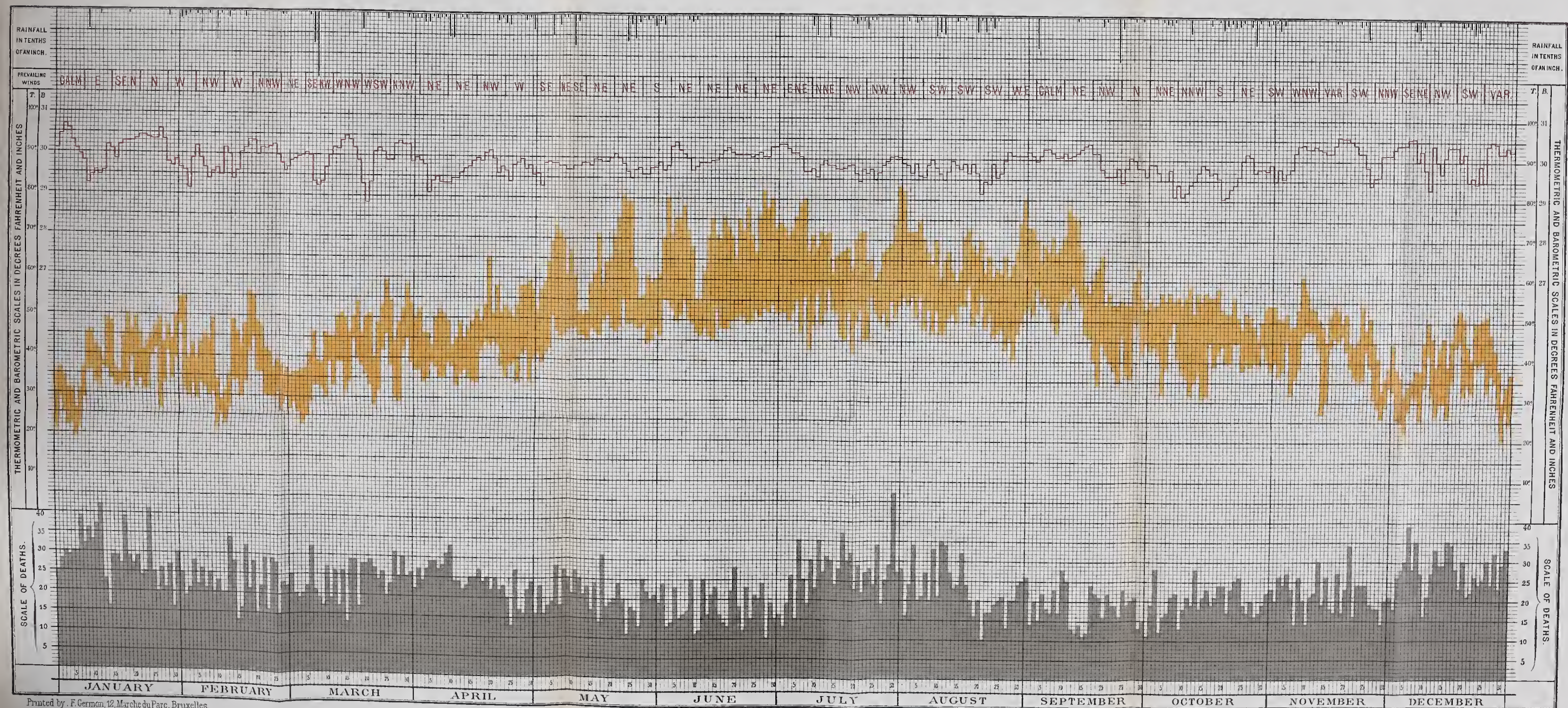






# City of Birmingham.

*Chart illustrating the relations of the number of deaths to the principal meteorological conditions on each day of the year 1889.*



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MORTALITY: — Deaths | METEOROLOGY: — Temperature (maximum and minimum) — BAROMETRIC PRESSURE — RAINFALL.  
(corrected and reduced to 32° Fahrenheit and sea level)





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HEALTH DEPARTMENT,

THE COUNCIL HOUSE,

*Birmingham, March 7th, 1890.*

TO THE HEALTH COMMITTEE.

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MR. CHAIRMAN AND GENTLEMEN,

I beg to present my Seventeenth Annual Report, for the year 1889, and to remark that, although the high sanitary position reached last year has not been quite maintained, the difference between the two years is not large. Introductory  
Remarks.

The general Death-rate is 0·9 per 1,000 higher than last year, having risen from 17·5 to 18·4; such slight variations must be expected under any circumstances, and scarcely affect the difference between the low rates of the last few years and those of twelve and fifteen years ago. A short period of extreme weather, such as a spell of frost and cold winds in winter, or an unusually hot summer, will, at any time, cause greater variation in the mortality than is observed between the years 1889 and 1888. The increase of 0·9 in the Death-rate is made up of an increase of 0·3 from general causes, principally in connection with the class of diseases designated local, and 0·6 from Zymotic diseases, particularly Scarlet Fever and Diarrhœa.

The Marriage-rate has again gone up after its long depression, and the Birth-rate also has undergone a slight increase for the first time since 1876; both of these changes, doubtless, result from the recent improvement in trade.

It is satisfactory to find that the mortality from Typhoid Fever has reached a lower point in Birmingham than ever before, while Diphtheria has experienced so slight an increase that it may be practically left out of account. The mortality from Typhoid has reached a much lower point in Birmingham than in twenty large towns in which it is also less; but while Diphtheria has been rapidly decreasing here it has been actually increasing in those towns. The improvement with regard to these diseases is so satisfactory because it may be accepted as a gauge of the amount and quality of the sanitary work done, inasmuch as they are peculiarly dependent for their propagation on insanitary surroundings, and are, therefore, essentially preventable.



Introductory  
Remarks  
(continued).

With the existence of an epidemic of Scarlet Fever, which has much exercised the public as well as the official mind, it must strike everyone as remarkable that the Zymotic Death-rate is lower than ever, with the exception of the two years 1885 and 1888, both of which, it must be observed, occupy the trough of the present epidemic wave of Scarlet Fever, while 1889 is the year of its crest. This is clear proof that the present epidemic development of Scarlet Fever, although associated with rather higher mortality from several other Zymotic diseases, has touched the town with a much lighter hand than the previous visitations within my sanitary experience.

It is very natural to desire a progressive improvement in the health of the City as an outcome of the sanitary work performed, and it must be admitted that the results are already very substantial. I am far from thinking, however, that the health of the City has attained its highest point; on the contrary, I am fully persuaded that it may be still further greatly improved. In order to achieve this object, the many sources of impurity, atmospheric and otherwise, must be removed. Dirt in one form or other is the evil which bars and clogs sanitary progress. There yet remain acres of midden and similar privies, which cannot fail to exert a most malefic influence, and the removal of which is essential to healthy existence; surface filth, defective drains and sewers, and unwholesome dwellings all require to be energetically dealt with before there can be any reasonable hope of raising the health of the community to its highest attainable point.

## I. VITAL STATISTICS.

Population.

The Population of the City, at the middle of the year 1889, calculated by the Registrar-General on the assumption that the same rate of increase has prevailed since the taking of the last census as obtained during the intercensal period 1871 to 1881, is 454,835. As I have pointed out, however, in previous Reports, there is reason to think that the rate of increase in the population has been less during the past eight years than in the previous decade. Should this prove to be the case, our Birth and Death-rates for at least the latter half of the present decade will have to be re-calculated.

Natural  
increase.

The natural increase of population, apart from the results of migration to and from the City, in other words the excess of births over deaths, is 5,649, or 1.24 per cent. of the entire population, against 1.30 per cent. in the previous year. The reduction in the percentage of increase is due to the fact that, though the Birth-rate is higher than in 1888, the rise in it is only slight, and is exceeded by that shown in the Death-rate. The estimated increase in the number of persons living in the

City is higher by nearly 1,300 than the natural increase in the population, and this adds weight to the opinion already expressed that the population is over-estimated.

The City covers an area of 8,400 acres. Calculated on the estimated population for the year, the average number of persons per acre, which of course increases with the increase in the population, is 54·1. It must not be supposed, however, that on any particular acre that number of persons are likely to be found living, for in all parts of the town, except Edgbaston Rotton Park, and the south-eastern portion of Bordesley Ward, the mean density is much higher, while in the districts mentioned, owing to the houses in them having a considerable amount of ground attached to them, and to large tracts of land being as yet unbuilt upon, the number of persons per acre is small.

In the following Table are given the estimated populations, mean densities, and recorded and corrected Death-rates in a number of large towns :—

	Estimated Population, 1889.	No. of Persons per Acre.	Recorded Death-rate.	Corrected Death-rate.
London ... ..	4,351,738	58·3	17·4	18·5
Liverpool ... ..	606,562	116·4	21·6	23·7
<b>Birmingham</b> ... ..	<b>454,835</b>	<b>54·1</b>	<b>18·4</b>	<b>19·9</b>
Manchester ... ..	378,800	63·9	26·7	29·8
Sheffield ... ..	327,227	16·7	20·9	22·4
Leeds ... ..	357,449	16·6	22·1	23·6
Salford ... ..	234,283	45·3	20·5	22·3
Newcastle-on-Tyne	160,983	30·0	25·2	26·7
Norwich ... ..	94,510	12·6	18·4	17·6
Bristol ... ..	229,361	49·5	17·6	18·2
Glasgow ... ..	528,144	86·4	24·8	—
Dublin ... ..	353,082	14·3	25·7	—

The height of Birmingham above sea-level ranges from 291 feet at the north-eastern extremity to 616 feet on the west side of the town. This considerable elevation tends to prevent stagnation of the air, and, together with the undulating character of the land, and, generally speaking, the porous nature of the red sandstone soil, causes considerable dryness of the surface, a very desirable feature from a hygienic point of view.

MARRIAGES.

From returns supplied me by Messrs. Cooper, Hastings, and Docker, Superintendent Registrars for the Parishes of Birmingham, Aston, and King's Norton respectively, I find that the number of Marriages registered in the City during the year was 3,788 against 3,634 in 1888. This number gives a

Marriage-rate. Marriage-rate of 16·7 per 1,000 of the population as compared with 16·2 in the previous year and 15·7 in 1887. Except in the years 1882 and 1883 so high a rate has not been observed during the past ten years, but in the five years 1873 to 1877 the Marriage-rates recorded were 20·4, 19·4, 20·1, 20·1, and 19·5 respectively. As I have remarked on several occasions, the rate of Marriage fluctuates pretty regularly with increased or diminished commercial prosperity, and the rise in the rate for the past year is no doubt due to the improvement in trade that has taken place.

The number of Marriages and the Marriage-rate in each of the last ten years have been as under :—

	Year 1880	1881	1882	1883	1884	1885	1886	1887	1888	1889
No. of Marriages	3,215	3,261	3,581	3,634	3,435	3,276	3,462	3,452	3,034	3,788
Rate per 1,000 of the Population	16·3	16·2	17·5	17·5	16·3	15·3	15·9	15·7	16·2	16·7

## BIRTHS.

Births.

The Births of 14,001 children were registered during 1889, comprising those of 7,134 males and 6,867 females. The quarterly numbers of Births, male and female, and the annual Birth-rate for each year since 1873 are subjoined :—

	1873.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.	Birth-rate
Total	...	3,741	3,564	3,378	3,814	14,497	40·78
Males	...	1,892	1,783	1,715	1,950	7,340	
Females	...	1,849	1,781	1,663	1,864	7,157	
1874.							
Total	...	3,814	3,871	3,493	3,710	14,888	41·25
Males	...	1,953	1,961	1,753	1,853	7,520	
Females	...	1,861	1,910	1,740	1,857	7,368	
1875.							
Total	...	3,787	3,737	3,581	3,757	14,862	40·57
Males	...	1,929	1,884	1,815	1,904	7,532	
Females	...	1,857	1,853	1,766	1,853	7,329	
Sexless	...	1	—	—	—	1	
1876.							
Total	...	4,140	3,924	3,803	3,949	15,816	42·53
Males	...	2,045	1,996	1,959	2,028	8,028	
Females	...	2,095	1,928	1,844	1,921	7,788	
1877.							
Total	...	4,296	4,009	3,769	3,927	16,001	42·39
Males	...	2,139	2,015	1,878	2,037	8,069	
Females	...	2,157	1,994	1,891	1,890	7,932	
1878.							
Total	...	4,139	4,096	3,849	3,880	15,964	41·67
Males	...	2,160	2,051	1,962	1,982	8,155	
Females	...	1,979	2,045	1,887	1,898	7,809	
1879.							
Total	...	4,124	3,912	3,723	4,087	15,846	39·98
Males	...	2,086	1,992	1,878	2,096	8,052	
Females	...	2,038	1,920	1,845	1,991	7,794	



		1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.	Birth-rate
1880.							
Total	...	3,964	4,104	3,572	3,471	15,111	38·28
Males	...	2,023	2,100	1,762	1,802	7,687	
Females	...	1,941	2,004	1,810	1,669	7,424	
1881.							
Total	...	3,965	3,754	3,530	3,590	14,869	36·96
Males	...	1,991	1,893	1,804	1,822	7,510	
Females	...	1,974	1,861	1,756	1,768	7,359	
1882.							
Total	...	3,968	3,760	3,478	3,660	14,866	36·39
Males	...	2,010	1,922	1,784	1,903	7,619	
Females	...	1,958	1,838	1,694	1,757	7,247	
1883.							
Total	...	3,975	3,814	3,460	3,452	14,701	35·44
Males	...	1,969	1,934	1,708	1,740	7,351	
Females	...	2,006	1,880	1,752	1,712	7,350	
1884.							
Total	...	3,765	3,817	3,557	3,852	14,991	34·91
Males	...	1,910	1,928	1,889	1,962	7,689	
Females	...	1,855	1,889	1,668	1,890	7,302	
1885.							
Total	...	3,776	3,528	3,550	3,529	14,383	33·62
Males	...	1,928	1,768	1,775	1,828	7,299	
Females	...	1,848	1,760	1,775	1,701	7,084	
1886.							
Total	...	3,697	3,623	3,524	3,438	14,282	32·88
Males	...	1,868	1,842	1,794	1,767	7,271	
Females	...	1,829	1,781	1,730	1,671	7,011	
1887.							
Total	...	3,509	3,594	3,372	3,418	13,893	31·50
Males	...	1,802	1,879	1,700	1,784	7,165	
Females	...	1,707	1,715	1,672	1,634	6,728	
1888.							
Total	...	3,522	3,436	3,470	3,245	13,673	30·53
Males	...	1,747	1,716	1,724	1,634	6,821	
Females	...	1,775	1,720	1,746	1,611	6,852	
1889.							
Total	...	3,604	3,659	3,405	3,333	14,001	30·78
Males	...	1,889	1,822	1,711	1,712	7,134	
Females	...	1,715	1,837	1,694	1,621	6,867	

The remarkable decline in the Birth-rate which has continued without intermission since 1876, when the rate was at its highest, has at last received a slight check, the Births registered during 1889 being equal to 30·78 per 1,000 of the population against 30·53 in the preceding year. The increase is, however, only a very small one and may be quite accidental; in any case it would be premature to suppose that the Birth-rate has yet reached its lowest point, particularly when it is known that in the whole of England and Wales, as well as in most of the large towns, it is still falling.

Birth-rates of  
large towns  
compared.

The statement below affords a comparison of the Birth-rates in ten large English towns during the past year :—

28 large Towns.	London	L'pool	Birm.	Manch.	Leeds	Sheff'd	Salf'd	N'castle	N'wich	Bristol
31·0	30·3	29·2	<b>30·8</b>	35·3	32·9	33·3	30·0	38·2	33·8	29·3

It will be seen that the rate for Birmingham is nearly equal to that of the twenty-eight large towns and is above the rates for London, Liverpool, Salford, and Bristol. The figures show a decrease on the previous year's rates in the twenty-eight towns, and in London, Liverpool, Salford, and Norwich, while in Manchester and Bristol the Birth-rates for the two years are unchanged.

## VACCINATION.

Vaccination.

As in former years I have been supplied with returns respecting Vaccination by Messrs. Rust, Blanche, and Lane, Vaccination Officers for the Parish of Birmingham, Mr. Stephens, Vaccination Officer for Aston Parish, and Mr. Johnson, Vaccination Officer for Edgbaston Parish. The figures included in these returns, which cover the year ending in June last, are given in full in Table X. in the appendix. I find that an increase has taken place in the percentage of children successfully Vaccinated in Birmingham, but that in Aston and Edgbaston the reverse of this is the case, the percentage being 1·4 below that of 1888 in the former district and 2·0 below it in the latter.

In Birmingham  
Parish.

The return for the Parish of Birmingham is better in every respect than in the preceding year. Of the 8,053 Births returned by the Registrars of Births and Deaths, 6,754 or 83·9 per cent. were successfully Vaccinated. This percentage is 0·9 higher than in 1888. In 811 cases, or 10·1 per cent., death occurred before Vaccination had been performed, while 326, or 4·0 per cent. of the children were removed from the town or the Vaccination Officers were unable to find them. Of the remaining 2·0 per cent. some proved insusceptible of Vaccination, others were certified as unfit for it, and some had been taken to places the Vaccination Officers of which had been informed of the fact. The most regrettable feature connected with these figures is the large percentage of cases lost sight of altogether, which is higher than in any previous year except 1888.

In Aston  
Parish.

In Aston Parish the Births of 5,554 children were notified to the Vaccination Officer, and successful Vaccination was performed on 4,355 or only 78·4 per cent. of them. This percentage has in previous years always been below those of Birmingham and Edgbaston Parishes, and has this year undergone a further decrease. This is largely due to the increased number of cases placed in the column headed "unfit, insus-

ceptible, or otherwise;" these formed 5·2 per cent. of the total number against 4·0 per cent. in 1888. The percentage of children classed as "dead unvaccinated" was 11·9, and of those lost sight of through removal from town or some other cause 4·5.

The figures for Edgbaston Parish indicate that the number of children successfully Vaccinated was 330 out of 380, or 86·8 per cent. Twenty-two or 5·8 per cent. died before reaching the age till which Vaccination may legally be deferred, and 13 or 3·4 per cent. were removed and not traced. This latter percentage is the highest with one exception for the past ten years, though still the record of Vaccination in Edgbaston is better by far than in the other two parishes.

The percentages commented on, together with those for the previous nine years, are given in the following Table :—

In Edgbaston.  
Table of comparison of vaccination.

PARISH.	Year.	Vaccinated.	Died before Vaccination.	Removed to places unknown.	Unfit, insusceptible, or otherwise.
Birmingham	1880	86·2	9·7	3·0	1·1
	1881	87·3	9·6	1·7	1·4
	1882	88·9	9·2	1·0	0·9
	1883	87·1	10·2	1·3	1·4
	1884	87·2	9·7	1·4	1·7
	1885	84·1	11·2	2·1	2·6
	1886	83·7	10·6	2·6	3·1
	1887	83·9	11·0	2·7	2·4
	1888	83·0	10·2	4·2	2·6
	1889	83·9	10·1	4·0	2·0
Aston (Borough portion)	1880	81·3	9·3	6·4	3·0
	1881	83·2	10·3	5·5	1·0
	1882	81·8	9·3	6·4	2·5
	1883	82·4	9·5	5·2	2·9
	1884	82·4	11·4	3·7	2·5
	1885	82·5	11·1	3·3	3·1
	1886	82·1	10·8	3·7	3·4
	1887	81·4	11·2	4·1	3·3
	1888	79·8	11·7	4·5	4·0
	1889	78·4	11·9	4·5	5·2
Edgbaston	1880	82·6	8·2	1·8	7·4
	1881	81·3	8·2	3·2	7·3
	1882	86·1	7·3	3·6	3·0
	1883	91·1	6·7	0·9	1·3
	1884	89·2	7·5	1·1	2·2
	1885	89·0	8·4	0·7	1·9
	1886	87·1	7·9	0·9	4·1
	1887	85·8	9·5	2·0	2·7
	1888	88·8	5·0	1·0	5·2
	1889	86·8	5·8	3·4	4·0



## DEATHS.

Deaths.

The Deaths of 8,352 persons, 4,343 of whom were males and 4,009 females, were registered in the City during 1889, against 7,835 in 1888, 8,536 in 1887, and 8,388, the average for the ten years 1879-88. The number for the past year is considerably higher than that of 1888, but lower than in 1887, and also below the average for the ten years 1879-88. This latter fact is all the more noteworthy when it is considered that the population is now more than 35,000 in excess of what it was on an average during those ten years.

Death-rate.

The Deaths registered give a rate of 18·36 per 1,000 of the population. In the previous year the Death-rate was only 17·5. With this single exception, however, the rate for 1889 is lower than any previously recorded in Birmingham, the nearest approach to it being found in 1885, when the deaths were equal to 19·1 per 1,000 of the number of persons then living in the City. Until the year 1876 the Death-rate was invariably above 23 per 1,000, and previous to 1885 it only once fell below 20 per 1,000, but since and including that year the highest rate has been only 19·6.

Saving of life.

If the mortality during the ten years ending with 1889 be compared with that of the previous decade, a great saving of life is found to have taken place. In the first-named period the average Death-rate is 19·7 : in the second it is 24·2. Had the rate for the decade 1870-79 continued during the ten years following, no less than 19,200 persons who are now living would have died during those ten years. Such a saving of life, together with the corresponding alleviation of suffering through illness which must of necessity have accompanied it, are causes for great congratulation. The value of the lives saved, moreover, is from a monetary standpoint so great as to more than justify a very large expenditure in the carrying out of sanitary measures. The late Dr. Farr computed that the average value of a human life is £159. If that be so, the lives saved during the past ten years are worth no less a sum than £3,052,800, and even this almost incredible amount is exclusive of the immense saving of money that would otherwise have been spent in dealing with the greater amount of illness inseparable from a heavier mortality.

The Mortality last year was at such a rate that, on an average, one person out of every 54·5 living died during the year, against one in 57·2 in 1888, and one in 51·7 in 1887.

Mortality in Institutions.

The Deaths among inmates of the various public institutions in the City numbered 1,319. Exclusive of those in the Work-house, they increased our Death-rate by 1·5. Inclusive of such deaths they account for 2·9 per 1,000.

When the Registrar-General's Report for 1889 is issued, it will be found that the figures in it relating to Birmingham do not agree with mine. This is due to the circumstance that in that Report all the deaths of paupers belonging to Birmingham, but who succumb in workhouses outside the City, are added to those returned by the local registrars. No account is taken, however, of the large number of persons not resident in the town who die in our numerous Medical and Surgical Institutions. I have always considered that such deaths at least counterbalance those of paupers who die in the King's Norton and Erdington Workhouses, and I have not, therefore, adopted the plan of the Registrar-General. My opinion on this point is, moreover, borne out by figures recently obtained from many of the public institutions, and as I am unable to eliminate from my records the deaths of non-residents who die within the town, I do not feel justified in including the deaths of residents who die outside its boundaries.

Discrepancy  
between  
Registrar  
General's and  
own figures.

The following Table gives the estimated population of the City, its mean density, the numbers of Births and Deaths and the Birth and Death-rate for each year since 1865 inclusive :—

Year.	Population Estimated in the middle of each year.	Density. Persons per acre.	Births.	Deaths.	Annual Rate per 1,000 living.	
					Births.	Deaths.
1865	<div> <div>The Estimate of</div> <div>Population</div> <div>in these years is</div> <div>not to</div> <div>be relied on.</div> </div>	—	12,699	8,014	38·9	24·5
1866		—	12,877	8,042	38·5	24·0
1867		—	13,029	8,318	38·0	25·6
1868		—	12,992	8,548	36·3	25·9
1869		—	12,779	7,737	35·5	23·1
1870		—	12,922	7,805	35·0	23·0
1871	344,980	41·1	13,443	8,594	39·0	24·9
1872	350,164	41·7	14,123	8,048	40·5	23·1
1873	355,540	42·4	14,497	8,990	40·8	24·8
1874	360,892	43·0	14,888	9,665	41·2	26·8
1875	366,325	43·6	14,862	9,668	40·6	26·3
1876	371,839	44·3	15,816	8,330	42·5	22·4
1877	377,436	44·9	16,001	9,038	42·4	23·9
1878	383,117	45·6	15,964	9,662	41·7	25·2
1879	388,884	46·3	15,846	8,650	40·0	21·8
1880	394,738	47·0	15,111	8,088	38·3	20·5
1881	402,296	47·9	14,869	7,938	37·0	19·7
1882	408,532	48·6	14,866	8,425	36·4	20·6
1883	414,846	49·4	14,701	8,714	35·4	21·0
1884	421,258	50·1	14,991	9,043	34·9	21·1
1885	427,769	50·9	14,383	8,156	33·6	19·1
1886	434,381	51·7	14,282	8,499	32·9	19·6
1887	441,095	52·5	13,893	8,536	31·5	19·4
1888	447,912	53·3	13,673	7,835	30·5	17·5
1889	454,835	54·1	14,001	8,352	30·8	18·4

Comparative  
Death-rate of  
Birmingham  
and large towns.

The following Table affords a comparison of our Death-rates with those of other large towns during the last seventeen years.

	Twenty large English Towns.	London	L'pool	BIRM.	Manch.	Leeds	Sheff'ld	Salford	Newcastle	Norw'ch	Bristol
1889...	19.0...	17.4	21.6	<b>18.4</b>	26.7	22.1	20.9	20.5	25.2	18.4	17.6
1888...	19.0...	18.5	20.3	<b>17.5</b>	26.1	20.6	20.5	21.1	20.6	20.2	16.9
1887...	20.6...	19.6	23.7	<b>19.4</b>	28.7	21.1	21.6	22.2	25.3	20.4	20.4
1886...	20.7 ..	19.9	23.8	<b>19.6</b>	26.3	21.9	19.8	22.1	22.2	23.3	19.3
1885...	20.4...	19.6	23.7	<b>19.1</b>	26.4	19.9	20.6	21.0	26.0	20.2	19.6
1884...	21.4...	20.3	25.1	<b>21.1</b>	26.3	24.1	22.3	22.2	23.0	21.1	18.3
1883...	21.7...	20.4	26.6	<b>21.0</b>	27.6	23.2	22.9	22.3	25.4	19.6	17.8
1882...	22.6...	21.4	26.5	<b>20.6</b>	26.8	23.2	21.7	23.2	23.1	20.6	19.2
1881...	21.7...	21.2	26.7	<b>19.7</b>	25.5	21.6	21.1	22.6	21.8	19.5	19.6
1880...	22.6...	22.2	27.3	<b>20.5</b>	25.4	21.0	21.1	25.9	22.0	24.7	20.1
1879...	23.2...	23.3	27.1	<b>21.8</b>	26.9	22.6	21.3	24.9	23.6	22.0	21.1
1878...	24.4...	23.5	29.4	<b>25.2</b>	27.9	23.8	25.0	25.6	23.8	24.6	21.4
1877...	22.8...	21.9	26.5	<b>23.9</b>	27.4	22.3	21.9	25.1	22.4	21.0	21.8
1876...	23.6...	22.3	27.6	<b>22.4</b>	29.2	25.1	24.3	31.9	22.8	21.9	22.6
1875...	25.4...	23.7	27.5	<b>26.3</b>	29.9	26.4	24.8	31.5	26.1	24.5	26.8
1874...	25.4...	22.5	32.0	<b>26.8</b>	30.4	28.7	26.9	29.6	29.2	23.5	22.7
1873...	24.4...	22.5	25.9	<b>24.8</b>	30.1	27.6	25.8	29.3	30.1	21.5	23.1

It will be noticed that, as in all the more recent years given in the Table, the Death-rate of Birmingham is below that of the twenty large English towns. Such has now been the case, indeed, for the last eleven years; previous to that period, however, Birmingham occupied this desirable position in only one year. Comparing our town with the others in the list, it will be seen that only two of them—London and Bristol—have a lower rate of mortality. In the first-named city the Death-rate shows a considerable fall in each of the last two years, and now stands at a very satisfactory level for so large a community. The rate for Bristol is also a very good one, though higher than in the preceding year. Our Death-rate is as much as 8.3 below that of Manchester, where the mortality has remained high and practically stationary for a number of years.

Movements in  
the Death-rate  
during each  
quarter of the  
year.

The total number of Deaths in each sex and the rate of mortality for each quarter of the past year, and for the five years 1885-9 are shown by the following figures:—

		1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Total 1889.	Total 1888.	Total 1887.	Total 1886.	Total 1885.
Total	...	2,297	1,947	2,085	2,023	8,352	7,835	8,536	8,499	8,156
Males	...	1,155	1,036	1,085	1,067	4,343	4,105	4,382	4,406	4,314
Females	...	1,142	911	1,000	956	4,009	3,730	4,154	4,093	3,842
Death-rate		20.20	17.12	18.34	17.79	18.36	17.49	19.35	19.57	19.07

The Death-rate of the first quarter is a little higher than in the previous year, but compares very favourably with those generally observed in winter quarters. The increase from the



preceding year is caused in part by a greater prevalence of Whooping Cough, and in part by a heavier mortality from Pneumonia. Each month of the quarter had a mean temperature below the average, February more particularly being cold, and to this no doubt is due very largely the increased number of deaths from Pneumonia. Such weather also exerts a bad influence on the mortality from Whooping Cough, chiefly because the disease is so lightly regarded that care is not taken to prevent the exposure of children who are suffering from it.

Movements in the Death-rate during each quarter of the year—*continued.*

The second quarter had a Death-rate almost identical with that of the spring quarter of 1888, only 0·05 per 1,000 separating them. The rate of 17·12 is an extremely good one for this portion of the year.

In the third or summer quarter of 1888, owing to the comparative absence of summer Diarrhœa, the unprecedentedly low rate of 15·49 was recorded. The meteorological conditions of course contributed largely to this result. In the summer of the year under review they were very different from the preceding year. Very fine, warm weather was experienced, and as a consequence the Diarrhœal Mortality, and with it the total Death-rate, rose considerably. As many as 380 Deaths from Diarrhœa were registered, against only 166 in the summer quarter of the preceding year.

The Death-rate of the fourth quarter shows an increase of 0·29 on that recorded in the previous autumn quarter. This increase is not attributable in a marked degree to any particular diseases, but is distributed over a number of them.

The number of Deaths in each of the eight Registration Sub-districts in each quarter of 1889 and in that and the three preceding years, together with the Death-rate for each sub-district during the past year, have been as follows :—

Distribution of Deaths among Registration Sub-Districts

	1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Total Deaths 1889.	Total Deaths 1888.	Total Deaths 1887.	Total Deaths 1886.	Death- rate. 1889
Ladywood (H.)	272	247	252	224	995	942	1,065	1,037	17·4
St. Thomas (H.)	184	203	158	167	712	641	810	744	19·0
St. Martin ...	208	149	182	164	703	670	779	747	17·4
St. George (H.)	379	296	375	325	1,375	1,365	1,493	1,575	21·3
All Saints (W.; L.; C.H.) ...	429	398	417	387	1,631	1,457	1,488	1,524	26·8
Deritend ...	433	334	366	369	1,502	1,397	1,499	1,510	14·2
Duddeston ...	316	258	288	310	1,172	1,143	1,148	1,089	18·7
Edgbaston ...	76	62	47	77	262	220	254	273	10·1

It will be seen that in every sub-district the number of Deaths shows an increase on that for the previous year. The largest proportionate increase is in Edgbaston, where remarkably few Deaths occurred in 1888; the smallest increase is in St. George's Sub-district. A large increase is also manifested in the Sub-district of All Saints, but much of this is due to the number of deaths from Scarlet Fever in the City Hospital.

Death-rates of  
Registration  
Sub-Districts.

Appended to the figures of actual mortality will be seen the Death-rates for the several Sub-districts. The populations on which these Death-rates are calculated are computed on the hypothesis that the same rates of increase or decrease have continued since the 1881 census as prevailed between 1871 and 1881. From various causes, however, such as extensive demolitions of property in certain parts of the town and the migration from some other parts towards the suburbs, it is probable that such rates of increase or decrease have varied considerably in the two periods. If this be so the populations of the sub-districts as estimated will not be found correct, and all Death-rates based on them must be taken with reserve.

Causes of Death-  
rates of certain  
Registration  
Sub-Districts  
appearing too  
high.

As, moreover, several of the sub-districts contain Public Institutions within their area in which persons from all parts of the town die, it is fairer in comparing the Death-rates to exclude the Deaths of such persons from the mortality of the district. When this is done the Death-rate in Ladywood Sub-district, which has within its boundary the Children's Hospital, falls from 17·4 to 16·2; by excluding the Deaths in the Queen's Hospital, that in St. Thomas's Sub-district is reduced from 19·0 to 15·0, while the Deaths in the General Hospital raised the Death-rate in the Sub-district of St. George from 17·4 to 21·3. The greatest reduction, however, takes place in the Sub-district of All Saints, which, if the Deaths in the Workhouse, Lunatic Asylum, City Hospital, and Gaol be omitted, has a Death-rate of only 13·2, instead of 26·8.

It will be noticed, when these corrections have been made, that the lowest Death-rate is as usual recorded in Edgbaston Sub-district, while the highest is that of Duddeston.

Distribution of  
Deaths among  
the Wards.

In the annexed statement will be found the number of Deaths in each Ward of the City during each quarter of the year, together with the total for the whole year and for each of the three preceding years.

	1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Total 1889.	Total 1888.	Total 1887.	Total 1886.
Rotton Park (W., C.H.) ...	318	304	292	281	1,195	1,092	1,138	1,142
All Saints (L.) ...	188	172	194	177	731	617	618	632
Ladywood (H.) ...	134	123	138	120	515	500	588	579
St. Paul ...	87	76	70	69	302	309	343	333
St. George ...	121	95	99	99	414	385	421	427
St. Stephen ...	94	75	144	97	410	461	478	473
St. Mary (H.) ...	186	133	151	144	614	548	614	680
St. Bartholomew ...	123	95	160	119	497	487	568	554
Market Hall ...	58	40	49	58	205	213	258	241
St. Thomas (H.) ...	132	163	116	118	529	465	571	540
St. Martin ...	111	87	85	80	363	333	395	376
Edgbaston ...	92	66	62	74	294	252	305	319
Deritend ...	135	104	126	125	490	451	497	560
Bordesley ...	233	190	154	188	765	701	718	676
Duddeston ...	145	99	112	140	496	480	472	420
Nechells ...	140	125	133	134	532	541	552	547

I possess no accurate knowledge of the populations of the sixteen Wards of the City, and am therefore unable to give and compare their respective Death-rates. The only value of the foregoing figures is to enable a comparison to be drawn between the number of Deaths in any particular Ward with that of the same Ward in previous years. When this is done the mortality shows an increase on that of the preceding year in all the Wards except four, namely, those of St. Paul, St. Stephen, Market Hall, and Nechells. It should, however, be borne in mind that the mortality in 1888 was generally lower than usual, and a closer inspection of the figures in the Table will show that only in the Wards of Rotton Park, All Saints, Bordesley, and Duddeston, is the number of Deaths above the average.

The next statement gives the numbers of Deaths at certain ætal periods for each quarter of the year, and for the whole year and the three preceding years:—

	1st Quar.	2nd Quar.	3rd Quar.	4th Quar.	Total 1889.	Total 1888.	Total 1887.	Total 1886.
Under 1 year of age ...	578	524	776	518	2,396	2,105	2,468	2,515
Between 1 and 5 years	402	293	354	346	1,395	1,292	1,360	1,434
"    5    "    20    "	125	123	102	139	489	444	507	514
"    20    "    40    "	287	233	220	237	977	932	997	930
"    40    "    60    "	420	357	290	338	1,405	1,366	1,424	1,407
At 60 years and upwards	485	417	343	445	1,690	1,696	1,780	1,699

Distribution of  
Deaths among  
the ætal  
periods.

At only one ætal period, that above 60 years, is the number of Deaths lower than in the foregoing year. In all the others the mortality is higher than in the former year, but closely resembles that of 1887. The greatest increase is manifested in children under one year old. The chief part of the excess in the mortality at this period is caused by the greater number of Deaths from Diarrhœa, while Whooping Cough, Premature Birth, Debility, and Marasmus have also contributed towards it. Between one and five years Scarlet Fever has been the cause of death in a much larger number of instances than in the preceding year, and accidental Deaths from Burning have also been more frequent. Scarlet Fever, too, has been the chief factor in raising the mortality at the next age period; while between 20 and 40 years, and also between 40 and 60, only slight variations in the numbers of Deaths have taken place. At the remaining ætal period, 60 years and upwards, Old Age and Bronchitis have had a greatly reduced fatality.

The average age at Death during each quarter of this and the previous year has been as follows:—

	1888.				1889.			
First Quarter ...	31 years and 5 months.				29 years and 0 months.			
Second " ...	31	"	1	"	29	"	1	"
Third " ...	26	"	6	"	22	"	8	"
Fourth " ...	25	"	7	"	28	"	8	"
Whole Year ...	28	"	9	"	27	"	4	"

Average age at  
death.



Average age at  
death  
(continued).

As might be expected from the distribution of the mortality at different ages, the average age at death is lower than in the previous year. The fall took place in the first three quarters of the year; in the fourth the Death-age has risen. The first quarter was marked by a large mortality in children from diseases of the respiratory organs, and to this may be attributed the lower age at death; while in the second quarter a similar result was brought about by an increased fatality of Scarlet Fever, Measles, and Whooping Cough—diseases of children. The prevalence of Infantile Diarrhœa accounts for the fall in the third quarter, and the higher age at death in the fourth quarter is due partly to a greater mortality among the aged from affections of the chest, and partly to a lessened prevalence of those zymotic diseases which attack young children.

Chart

I have appended to this Report a chart showing the mean age at death and the total Death-rate for each week of the past year.

### INFANT MORTALITY.

Infant  
Mortality.

The reduced proportion of Infant Mortality noticed in my Report for the year 1888 has not been maintained. The number of Deaths under one year of age, registered during the past year, was 2,396 against 2,105 in the previous year. This figure gives a percentage on the total number of Births of 17·1 compared with 15·4 in 1888; the proportion of Deaths under one year to total Deaths is 28·7 per cent.

The record of Infant Mortality for the past year is by no means a good one. The percentage of Deaths under one year on Births is 0·7 higher than the average of twenty large towns, and 2·7 above that for the whole of England and Wales. The proportion of Infant to total Mortality is also unusually high.

The Deaths of Infants under one year are equal to a rate of 174·2 per 1,000 of the total number living at that age; in the years 1886–8 the rates were 189·6, 182·6, and 151·3 respectively.

Percentage of  
Infant Deaths  
on Births.

The percentages of Deaths under one year to Births in our own and other large towns in England, during the past ten years, have been as follows:—

Twenty large English Towns.	London.	L'pool.	BIRM.	Manch.	Leeds.	Sheff'd.	Salford.	Newcastle.	Norw'ch.	Bristol.	
1889...	15·9...	14·1	18·8	<b>17·1</b>	17·6	17·7	17·4	18·1	17·5	16·3	14·6
1888...	15·4...	14·6	16·8	<b>15·4</b>	17·6	17·3	17·8	18·4	13·7	16·3	12·3
1887...	16·7...	15·8	18·6	<b>17·8</b>	19·1	17·2	17·7	19·5	17·4	15·8	14·9
1886..	16·8...	15·9	18·8	<b>17·6</b>	18·3	18·1	16·8	19·8	15·5	20·2	14·9
1885...	15·4...	14·8	17·4	<b>15·7</b>	17·5	15·5	16·4	17·4	17·2	13·5	15·2
1884...	16·7...	15·5	19·4	<b>17·4</b>	18·3	18·4	17·2	18·4	15·6	18·7	14·3
1883...	15·9...	14·6	18·6	<b>15·9</b>	17·7	16·7	16·3	17·1	16·7	15·1	13·4
1882...	16·1...	15·1	17·8	<b>16·5</b>	17·9	18·0	16·5	17·8	16·6	16·9	14·2
1881...	15·2...	14·8	17·3	<b>15·0</b>	16·1	16·7	15·5	16·3	15·3	14·7	12·5
1880...	17·0...	15·8	19·1	<b>17·2</b>	18·0	17·4	16·5	20·0	17·1	21·6	14·6



It will be noticed that our Infant Mortality in proportion to Births compares unfavourably with that of London, Norwich, and Bristol, and also with that of the twenty large towns as a whole. Our relative position, however, though worse than in 1888, is not so bad as in the two preceding years.

The following Table shows the percentages of Deaths under one year to total Deaths during the same period :—

Twenty large English Towns.	London.	L'pool.	BIRM.	Manch.	Leeds.	Sheff'd.	Salford.	N'castle.	Norw'h.	Bristol.	
1889...	25.7..	24.6	25.4	<b>28.7</b>	23.3	26.3	27.8	26.4	26.5	30.0	24.3
1888...	25.0...	24.3	24.5	<b>26.9</b>	23.9	27.4	26.7	27.5	25.2	28.0	21.4
1887...	26.0...	25.6	24.4	<b>28.9</b>	23.9	27.2	27.0	28.1	26.9	26.2	21.7
1886...	26.7...	25.8	26.4	<b>29.6</b>	25.3	27.9	28.9	30.8	27.5	30.1	23.5
1885...	25.1...	24.5	24.6	<b>27.6</b>	24.0	26.8	27.7	28.3	25.3	22.5	24.0
1884...	26.8...	25.7	27.1	<b>28.9</b>	25.1	26.4	28.3	29.4	26.7	30.1	24.5
1883...	25.6...	24.2	24.5	<b>26.8</b>	23.0	24.8	26.1	27.2	24.1	26.1	24.0
1882...	25.6...	24.3	24.5	<b>29.1</b>	24.6	27.8	28.4	24.0	26.9	27.7	24.4
1881...	24.9...	24.1	24.4	<b>27.7</b>	23.3	28.5	27.9	27.9	25.8	25.5	22.0
1880...	26.8...	25.7	26.7	<b>32.1</b>	24.0	29.4	27.5	29.3	28.0	30.0	24.0

Percentage of Infant deaths on total deaths.

In this Table Birmingham occupies, in relation to other towns, a much worse position than in the preceding one. With the exception of Norwich, indeed, no town in the list has so high a proportion of Infant Deaths to Deaths at all ages. That so large a number of children born in our town die before attaining one year of age gives cause for profound regret.

Among children under five years of age there have been 3,791 Deaths against 3,397 in 1888, 3,828 in 1887, and 3,857 the average of the ten years 1879–1888. The percentage on total Deaths is 45.4 as compared with 43.4 in 1888 and 44.8 in 1887.

Deaths under five years.

TABLE SHOWING POPULATION AND NUMBER OF DEATHS OF PERSONS, MALES AND FEMALES, AT ALL AGES, AND AT FIVE GROUPS OF AGES, IN THE CITY, DURING THE YEAR 1889.

Population and Deaths at certain atal periods.

	PERSONS.		MALES.		FEMALES.	
	Estimated Population 1889.	Deaths, 1889.	Estimated Population, 1889.	Deaths, 1889.	Estimated Population, 1889.	Deaths, 1889.
All ages ...	454,835	8,352	219,963	4,343	234,872	4,009
Under 5 years ...	67,495	3,791	33,618	2,036	33,877	1,755
5 to 20 „ ...	148,589	489	72,160	268	76,429	221
20 to 40 „ ...	138,779	977	66,285	508	72,494	469
40 to 60 „ ...	75,039	1,405	36,854	723	38,185	682
60 and upwards	24,933	1,690	11,046	808	13,887	882

Death-rates at  
certain ætal  
periods.

TABLE SHOWING RATE OF MORTALITY PER 1,000 PERSONS, MALES AND FEMALES, LIVING DURING 1889, AT ALL AGES, AND AT FIVE GROUPS OF AGES, COMPARED WITH THE ENGLISH LIFE TABLE RATES (FARR).

	PERSONS.		MALES.		FEMALES.	
	Birmingham	English Life Table.	Birmingham	English Life Table.	Birmingham	English Life Table.
All ages... ..	18·4	21·5	19·7	22·4	17·1	20·7
Under 5 years ...	56·2	65·7	60·6	70·1	51·8	61·3
5 to 20 „ ...	3·3	7·1	3·7	7·0	2·9	7·2
20 to 40 „ ...	7·0	10·3	7·7	10·1	6·5	10·5
40 to 60 „ ...	18·7	18·3	19·6	19·4	17·9	17·2
60 and upwards	67·8	71·7	73·1	73·9	63·5	69·7

A glance at the second Table will show that our Death-rate in persons of both sexes is below that of the English Life Table at all the ætal periods, except that between 40 and 60 years. The difference between the two series of Death-rates is, however, far from constant. At all ages only 3·1 per 1,000 separates the rate for Birmingham from that of the whole country; under 5 years there is a difference of 9·5 in the rates, between 5 and 20 years one of 3·8, between 20 and 40 years 3·3, while the difference at 60 years and upwards is 3·9.

Compared with the previous year the Death-rate in children under five years of age exhibits an increase of 4·9, while that for each of the three following ætal periods shows a slight increase. At sixty years and upwards on the other hand the Death-rate is 1·6 below that of 1888.

An examination of the Death-rates in males and females brings to light the fact that equally large variations have taken place amongst them also.

The most peculiar feature in the Death-rates in males and females is that the rates for Birmingham between five and forty years of age are higher among males than among females; in the English Life Table the exact opposite is the case.

Among males at all ages the Death-rate has been 2·6 per 1,000 higher than that among females; in the previous year the excess of male over female mortality was 2·8 per 1,000, and in the English Life Table it is 1·7; thus the ratio of Deaths in males to those in females is as usual higher than in the whole country.

The increase, compared with the previous year, in the Death-rate among children under five is rather greater in males than in females, while the whole of the rise at the next age

period has occurred in males, the rate among females being identical with that of the preceding year. Between twenty and forty years of age, on the contrary, the Death-rate among females has risen rather more than that of males, though it is still considerably below the rate given in the English Life Table. At the next ætal period, that between forty and sixty years, the Death-rate in males has fallen 1·7 per 1,000, while that in females has risen to almost the same extent, making the rates correspond much more nearly with those of the Life Table. Among persons over sixty years the reduction in the rate of mortality has been slightly larger in females than in males. Among the latter the rate very nearly equals that of the English Life Table, while in females at this period of life it is no less than 6·2 per 1,000 below it.

Death-rates at  
certain ætal  
periods  
(continued).

ANALYSIS OF THE MORTALITY IN THE CITY OF BIRMINGHAM IN EACH OF  
THE SEVENTEEN YEARS, 1873 TO 1889.

YEAR.	Deaths of Infants under 1 year.	Proportion of Deaths under 1 year to 1,000 Births.	DEATHS.				Annual rate per 1,000 living.			
			AT ALL AGES.		FROM ALL CAUSES.		AT ALL AGES.		FROM ALL CAUSES.	
			From all Causes.	From Seven Zymotic Diseases.	Of Children under 5 years.	Of Persons over 60 years.	From all Causes.	From Seven Zymotic Diseases.	Of Children under 5 years.	Of Persons over 60 years.
1873	2627	181	8990	2042	4424	1521	24·8	5·6	12·4	4·3
1874	2688	178	9665	2652	4589	1459	26·8	7·3	12·7	4·4
1875	2957	196	9668	2145	4785	1590	26·3	5·9	13·0	4·3
1876	2537	160	8330	1336	3881	1441	22·4	3·6	10·4	3·9
1877	2628	164	9038	1576	4460	1521	23·9	4·2	11·8	4·0
1878	2766	170	9662	2421	5128	1506	25·2	6·3	13·4	4·0
1879	2385	150	8650	1251	4095	1686	21·8	3·2	10·5	4·3
1880	2601	172	8088	1324	4043	1397	20·5	3·4	10·2	3·5
1881	2212	150	7938	1128	3741	1506	19·7	2·8	9·3	3·7
1882	2452	165	8425	1413	3979	1459	20·6	3·4	9·8	3·7
1883	2338	159	8714	1306	3818	1704	21·0	3·1	9·2	4·1
1884	2611	174	9043	1681	4315	1597	21·1	3·9	10·0	3·7
1885	2253	157	8156	876	3408	1708	19·1	2·0	8·0	4·0
1886	2515	176	8499	1383	3949	1699	19·6	3·2	9·1	3·9
1887	2468	178	8536	1336	3828	1780	19·4	3·0	8·7	4·0
1888	2105	154	7835	875	3397	1696	17·5	2·0	7·6	3·8
Average 1873 to 1888	2509	168	8702	1547	4115	1579	21·9	3·9	10·4	4·0
1889	2396	171	8352	1191	4791	1690	18·4	2·6	10·5	3·7

Full details of the mortality are set forth in Table A, on pages 34–36.



# SPECIFIED CAUSES OF DEATH.

Specified causes  
of Deaths.

The Deaths during the year were distributed among the eight classes of diseases as under :—

Class	I.—Zymotic Diseases	...	1,287, or 15·4 per cent. of total mortality.		
„	II.—Parasitic	„	11, or 0·1	„	„
„	III.—Dietic	„	53, or 0·6	„	„
„	IV.—Constitutional Diseases	...	1,286, or 15·4	„	„
„	V.—Developmental	„	675, or 8·1	„	„
„	VI.—Local	„	4,060, or 48·6	„	„
„	VII.—Violent Deaths	...	359, or 4·3	„	„
„	VIII.—Deaths from ill-defined and not specified causes		621, or 7·5	„	„

The distribution of the Deaths among the eight different classes of disease differs from that of the previous year in one particular. Comparatively many more Deaths have been allotted to the first or Zymotic class, while a small increase has also taken place in every other class. The distribution of mortality in 1888 was indeed an unusual one, and that for the past year shows a return to the average.

## CLASS I.—ZYMOTIC DISEASES.

Zymotic  
Diseases.

The mortality in this class, which includes, in addition to the seven chief Zymotics, all Malarial, Zoogenous, Venereal, and Septic diseases, shows a considerable increase on the preceding year's record. The Deaths numbered 1,287 and constitute 15·4 per cent. of the total number; they give a Death-rate of 2·8 per 1,000 of the population compared with rates of 2·2 in 1888 and 3·3 in 1887. The increase in the number of Deaths in this class is brought about by a heavier mortality from the

## SEVEN PRINCIPAL ZYMOTIC DISEASES,

Seven Principal  
Zymotics

including Small-pox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever, and Diarrhœa. These have caused 1,191 Deaths during the past year, compared with 875 in 1888, 1,336 in 1887, 1,383 in 1886, and 1,257, the average of the ten years 1879–88. Thus, though the Deaths from these diseases have been much more numerous than in 1888, they are below the average of the ten years prior to 1889; only on three occasions, in fact, have I recorded a lower number than in the past year, viz., in 1881, 1885, and 1888; while the average for the first ten years of my tenure of office was as high as 1,728. The record of Zymotic Mortality for the year under review affords real grounds for congratulation, especially when it is known that the crest of a wave of Scarlet Fever is included in it.



The Deaths from the seven chief Zymotic diseases are equal to a rate of 2·6 per 1,000, against 2·0 in 1888. Excepting those of 1885 and 1888, which were both 2·0, the Zymotic Death-rate is the lowest in my records, which extend back to 1873.

The following Table shows our Zymotic Death-rate, together with those of some of the largest English towns, during the past ten years:—

	Twenty large English Towns.	London.	L'pool.	BIRM.	Manch.	Leeds.	Sheff'd.	Salford.	N'castle.	Norw'h.	Bristol.
1889...	2·7...	2·2	3·4	<b>2·6</b>	4·0	3·4	3·3	4·6	3·0	1·9	2·1
1888...	2·4...	2·5	2·5	<b>2·0</b>	3·1	2·7	3·6	3·5	1·4	2·1	1·3
1887...	3·2...	3·0	3·9	<b>3·0</b>	4·9	2·7	4·2	4·4	3·4	3·7	3·0
1886...	2·8...	2·7	3·1	<b>3·2</b>	3·0	3·4	2·9	3·8	2·5	3·5	2·2
1885...	2·7...	2·8	3·6	<b>2·0</b>	3·1	2·2	2·7	3·4	4·4	2·1	2·3
1884...	3·5...	3·3	4·5	<b>3·9</b>	3·6	4·9	4·2	4·2	3·2	3·1	1·8
1883...	2·6...	2·8	4·5	<b>3·1</b>	3·6	4·0	4·0	3·3	4·3	1·0	1·2
1882...	3·9...	3·4	4·4	<b>3·4</b>	3·7	3·4	2·8	3·8	3·3	2·4	2·3
1881...	3·4...	3·6	4·5	<b>2·8</b>	2·3	2·9	2·7	2·9	2·6	1·7	2·3
1880...	4·0...	3·7	5·1	<b>3·4</b>	4·2	3·3	4·4	6·8	3·2	5·8	3·1

Birmingham, it will be seen, occupies a good position in the Table. Only three towns in the list, viz., London, Norwich, and Bristol, have lower rates of mortality from Zymotic diseases, while the rates for the remaining towns and for the twenty large towns as a whole are higher than ours. In as many as seven of the large towns the Zymotic Death-rate is higher than in 1888, leaving only three in which it is lower.

The percentages of Zymotic Deaths on total Deaths in the same towns and for the same period have been as follows:—

	Twenty large English Towns.	London.	L'pool.	BIRM.	Manch.	Leeds.	Sheff'd.	Salford.	N'castle.	Norw'h.	Bristol.
1889...	14·6...	12·8	15·6	<b>14·3</b>	15·0	15·2	15·6	22·3	12·1	10·5	12·1
1888...	12·6...	13·7	12·3	<b>11·2</b>	12·0	13·1	17·5	16·7	7·1	10·6	7·6
1887...	15·6...	15·4	16·6	<b>15·7</b>	17·0	12·8	19·7	20·1	13·4	18·1	14·8
1886...	13·7...	13·5	13·2	<b>16·3</b>	11·6	15·7	14·5	17·2	11·2	15·1	11·0
1885...	13·3...	14·1	15·1	<b>10·7</b>	11·6	11·4	13·1	16·2	17·0	10·3	11·7
1884...	16·3...	16·4	17·8	<b>18·6</b>	13·6	20·2	18·6	18·9	14·0	14·7	10·0
1883...	12·0...	13·4	16·8	<b>14·9</b>	12·9	17·0	17·3	14·9	17·0	5·1	6·9
1882...	16·1...	16·3	16·6	<b>16·5</b>	14·9	15·1	11·5	16·8	14·4	12·0	12·3
1881...	15·5...	17·0	16·8	<b>14·2</b>	9·1	13·6	13·0	12·9	12·1	8·7	11·7
1880...	17·7...	16·8	18·6	<b>16·4</b>	16·4	15·7	21·0	26·2	14·4	23·7	15·4

As in the previous statement, Birmingham compares favourably with the other large towns, when judged by the proportion of Zymotic to total Mortality. In the twenty towns the percentage of Deaths from the chief Zymotics on Deaths

from all causes has risen from 12·6 to 14·0, and in most of the separate towns an increase is noticeable, the lowest proportion in any town being 10·5 per cent. against 7·1 in 1888.

The heaviest Mortality from any of the Zymotic diseases is as usual attributable to

#### DIARRHŒA,

Diarrhœa. which is set down as the cause of Death in 465 instances, including six Deaths certified as due to English Cholera. This number compares with 305 in 1888, 550 in 1887, 729 in 1886, and 497, the annual average of the ten years 1879-1888. The Death-rate from this cause is 1·0 per 1,000, against 0·7 in 1888, 1·2 in 1887, and 1·7 in 1886. In the summer quarter it was 3·3 per 1,000 per annum against 1·5 in the previous summer quarter, and 4·0 and 5·0 in the corresponding portions of 1887 and 1886 respectively.

Temperature in relation to Diarrhœa.

A peculiar feature in the incidence of the Mortality from Diarrhœa is revealed by a reference to the weekly number of Deaths given in the table on page 40. Generally speaking, Diarrhœa is most prevalent in August, and often continues to cause a large number of Deaths even till late in September; but is not very fatal in July. In the year under review the higher mortality from it commenced at the end of June, earlier in fact than has ever been the case within my memory. The greatest number of Deaths were registered at the end of July and the beginning of August, and by the end of August the exceptional fatality of the disease had practically ceased. Thus, by the time at which we generally reach the height of the summer visitation of Diarrhœa, the disease had almost disappeared.

The cause of this unlooked-for feature in the Diarrhœal mortality of the past year is to be found in the circumstance that the warm summer weather began and ended at a much earlier date than it generally does. Both May and June had high temperatures, and the greater part of June was characterised by dry weather, which continued also into July. The effect of these conditions was to warm the earth to an exceptional degree for the time of year. Dr. Ballard points out in his Report to the Local Government Board on this subject that the mortality from Diarrhœa always rises with the rise in the ground temperature, and undoubtedly the early date at which the earth, owing to particular meteorological conditions, reached its usual summer temperature, accounts for the peculiar distribution of the deaths from Diarrhœa during the weeks of the past summer.

A reference to the mortality Table on pages 34-36 shows that 75 per cent. of the Deaths from Diarrhœa occurred in infants under one year, and 91 per cent. in children under five years; of the remaining 9 per cent. the greater part, 58 per cent., took place amongst persons of 60 years and over.

Infancy and old age in relation to Diarrhœa.

In my classification I have again followed the practice of the Registrar-General in placing under the heading of Diarrhœa those Deaths in which it is given as a secondary cause to some such ill-defined disease as Debility, Marasmus, etc.

Mode of classification.

### WHOOPING COUGH

comes next to Diarrhœa in order of fatality, having occasioned 279 Deaths against 235 in the preceding year, and 271 the average number for the ten years 1879-1888. This year's figure, though rather high, has been frequently exceeded in the past; in 1879 for example, 384 Deaths were attributed to this disease. It has been spread pretty evenly over the City during the year, and its fatal effects have been almost confined, as is always the case, to children under five years old, and more of the Deaths have been in children between one and five years than in infants under one year. Whooping Cough is a disease over which little control can be exercised by the Sanitary Authority, and till the dangers connected with it, and the necessity of avoiding the risk of infection are better recognised by those who have charge of children, the mortality from it is not likely to show much decrease.

Whooping Cough.

### The Deaths from

### MEASLES

numbered 197 against 193 on an average during the preceding ten years, and 191 in 1888. In proportion to population the Registration Sub-district of Duddleston has suffered most from this disease, particularly in the fourth quarter of the year, when more than half the Deaths occurred in that part of the town. A similarly high mortality from Measles was also noticed there in 1888. Measles, like Whooping Cough, is practically beyond the reach of sanitary measures, and the lessening of its fatality must depend more upon the precautions taken by individuals than upon the action of Health Authorities.

Measles.

Appended to the Report is a map marked with red crosses to indicate the position of each fatal case during the year under review.

Map.



## The mortality from

### SCARLET FEVER

Scarlet Fever. has been higher during the past year than in any other year since 1883. A total of 156 Deaths have been ascribed to this cause against 40 in the preceding year, 34 in 1887, and 145, the annual average of the ten years 1879-88. From the first quarter of the year, when 19 Deaths occurred from Scarlet Fever, the mortality steadily increased till in the fourth quarter it amounted to 68 Deaths. The town has in fact suffered from an epidemic of Scarlet Fever, though so small has the mortality been in comparison with other epidemics that it is hard to realise that such is the case. In 1874 for instance, 737 Deaths from this cause were registered, and in 1878 no less than 995, or more than six times as many as during the past year. That an epidemic of Scarlet Fever should have visited Birmingham, and yet that so few lives should have been lost, speaks loudly for the improved measures that have been adopted to cope with the disease, and proves the immense value of hospital accommodation. In 1878, when 995 deaths from Scarlet Fever occurred, this being the worst epidemic of the disease within my records, the proportion of cases treated at the City Hospital was 0·4 to one death in the City; in the past year it was 11·5 to one death.

Map.

A map at the end of the Report is marked with red spots to indicate the locality in which each fatal case of Scarlet Fever occurred.

The disease began to be more prevalent in the City in the latter half of 1888, but the increase was slight. Its prevalence did not develop much till the beginning of May, when the number of cases reported to the Department commenced to rise, and continued to do so more and more rapidly till the height of the epidemic was reached in October. From the end of October a steady decline set in and lasted till the end of the year.

The strain put upon the Department in dealing with so large a number of cases of Scarlet Fever has been very great, and the accommodation provided at the City Hospital has had to be much extended; into this latter point I have gone at greater length in the second part of my Report, on pages 61, 62.

There is a general impression abroad that Scarlet Fever of late years has been much more prevalent and much more fatal than for many years previously; this popular notion, like many others, proves on reference to the statistics of the disease in Birmingham to be a gross popular error, founded doubtless on the facts that much more attention has been given to the prevention of the disease by extensive though incomplete, because



voluntary, notification, the large extension of hospital provision, and the removal to and treatment in hospital of the great majority of the cases. As a result of this sustained official action and the prominence given to the subject by the press, what has been an exceptionally light visitation of the epidemic has appeared to be an unusually heavy one.

Scarlet Fever, as you are aware, has occurred in periods, or “waves” as they are called, of about five years duration ; the highest point of one of these waves was reached in the year 1874, that of another in the year 1878, that of a third in 1883, and of the last in the year to which this Report relates, 1889, since when it has gradually declined. Perhaps the simplest way of stating, for comparison, the relation of these periods to each other is by means of a Table, marking off the periods from commencing decline to culmination of each period as evidenced by the mortality, as follows :—

Scarlet Fever  
“Waves.”

Year.						Number of deaths from Scarlet Fever.
1874	...	...	...	...	...	737
1875	...	...	...	...	...	265
1876	...	...	...	...	...	204
1877	...	...	...	...	...	237
1878	...	...	...	...	...	995
1879	...	...	...	...	...	306
1880	...	...	...	...	...	123
1881	...	...	...	...	...	164
1882	...	...	...	...	...	256
1883	...	...	...	...	...	326
1884	...	...	...	...	...	134
1885	...	...	...	...	...	31
1886	...	...	...	...	...	39
1887	...	...	...	...	...	34
1888	...	...	...	...	...	40
1889	...	...	...	...	...	156

It is to be noted that while the length of the period has progressively increased the number of Deaths has enormously diminished, viz., from 1,701 to 434 ; but in order to institute a fair comparison between the totals they should be calculated on equal periods of time. If this be done the figures are as follows : 2,551, 1,410, and 434, showing a diminution in the last period of nearly five-sixths of the first total, and of between two-thirds and three-fourths of the second.

In connection with this enormous decline of the disease, I would direct your attention to the record of cases of Scarlet Fever treated in the City Hospital. In the first year of the Hospital’s existence, 1875, the number was no more than 20, in the year of culmination of the next epidemic, 1878, it rose to 424, in the next corresponding year it reached 638, while in the last comparable year, 1889, the number had increased to 1,801 ;

Cases removed  
to City Hospital

or taking the three epidemic periods, we find that in the first, from 1875 to 1878, the number treated at the Hospital was 525, in the second period, from 1879 to 1883, the number had grown to 1,952, while in the last period, from 1884 to 1889, it had attained the large total of 3,759. It is thus seen that the diminution of the mortality from Scarlet Fever in the City is, in general terms, coincident with the extent of the use made of the Hospital—little use of the Hospital, large mortality—greater use of the Hospital, medium mortality—greatest use of the Hospital, least mortality. There is occasionally found some one who objects to Hospital treatment on the ground that it is not a means of isolation but of aggregation, and that it *must* therefore do an infinite deal of mischief; the above statements most effectually dispose of the assumptions of such persons, and justify in the most complete manner the action of your Committee in providing Hospital accommodation adequate to the needs of the community. Years ago the public hesitated to send their cases to the Hospital, but its management and usefulness have so much commended themselves, that distrust and hesitation have given way to confidence and appreciation, and so the public has become educated to take a correct view of the advantages it offers and confers.

Benefit  
obtained from  
Isolation.

While giving full credit to generally improved Sanitary conditions for some share in the diminished occurrence of Scarlet Fever, I think it will be generally admitted that the chief benefit obtained results from isolation in hospital. This appears not only to have progressively limited the number of cases of the disease or lowered the crest of the epidemic wave, but to have had also the remarkable effect of lengthening it, so that while in the last epidemic it extended over six years, in the one before it extended over only five years, and in the one before that, it extended over only four years. Thus whatever way the question be regarded the results seem to be equally satisfactory.

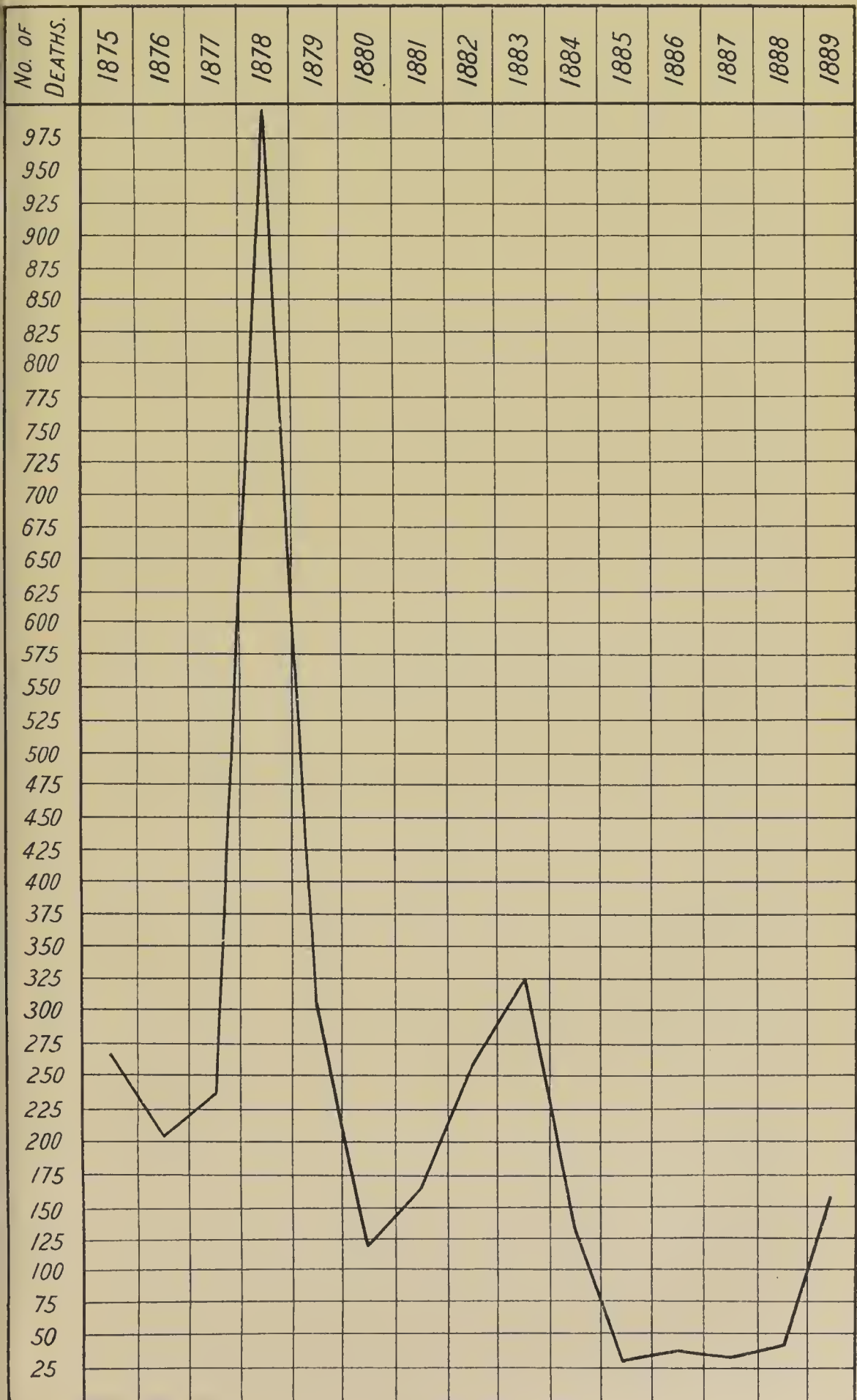
Scarlet Fever  
in relation to  
Temperature.

Another mistaken popular impression regarding Scarlet Fever is that it is promoted by hot and stamped out by cold weather. This conclusion is not at all justified by the facts. Taking the culminating years it will be found that the highest point in the mortality has always been reached when the atmospheric mean monthly temperature was moderate, for instance 44° Fahrenheit in 1875, 49° in 1878, 56° in 1883, and 43·5 in 1889, while a much lower mortality almost invariably prevailed during the hottest part of each of these years. It would therefore be more reasonable to conclude that warm weather and not cold is unfavourable to the increase of this disease.

Charts.

In order to render the comparison between different years more easy to realise, I append charts graphically representing the Scarlet Fever mortality in each of the fifteen years from 1875 to 1889 inclusive, and in each month of each of those years.

*Chart shewing the number of Deaths from Scarlet Fever in each of the Fifteen Years, 1875-1889.*

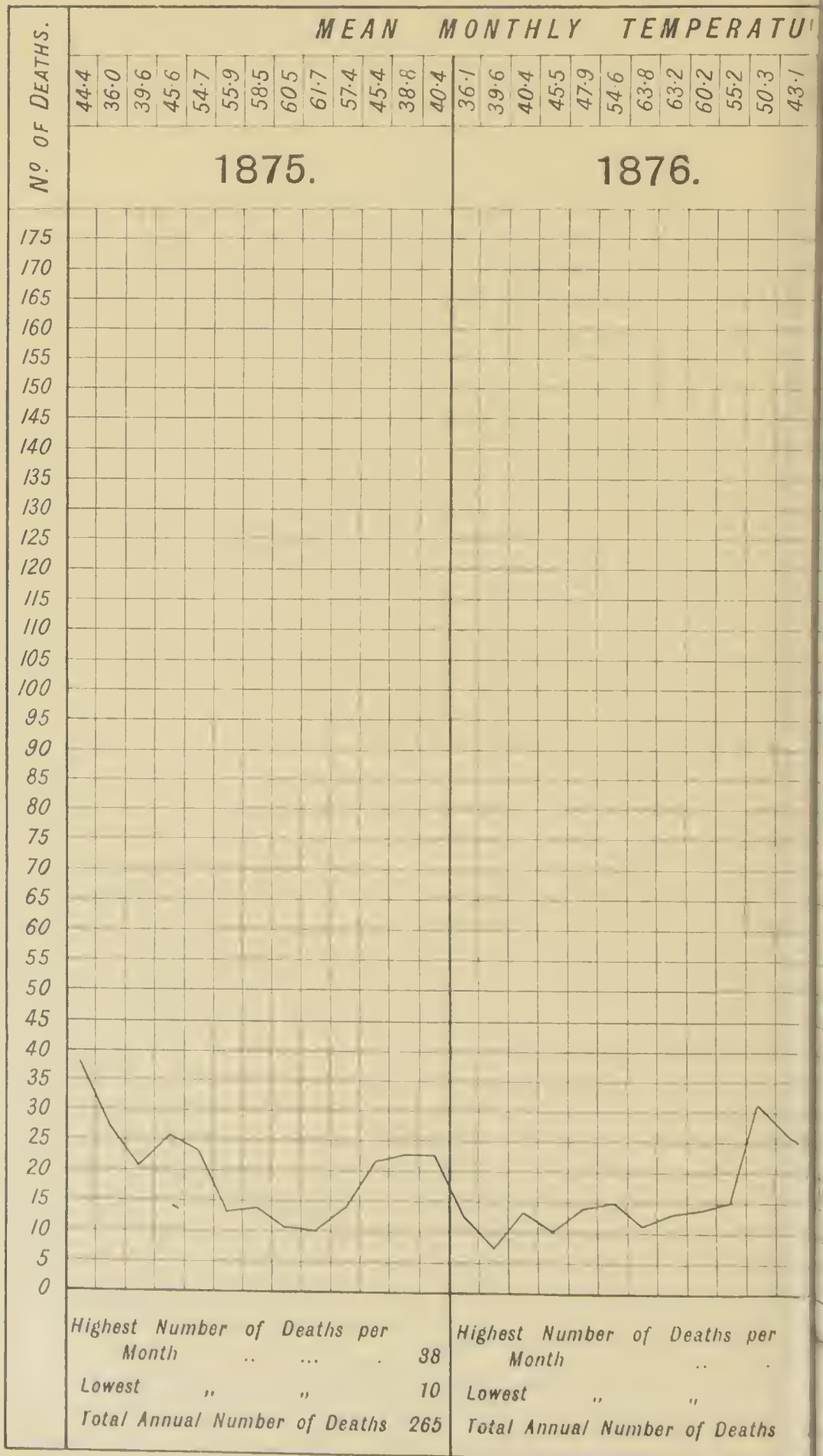






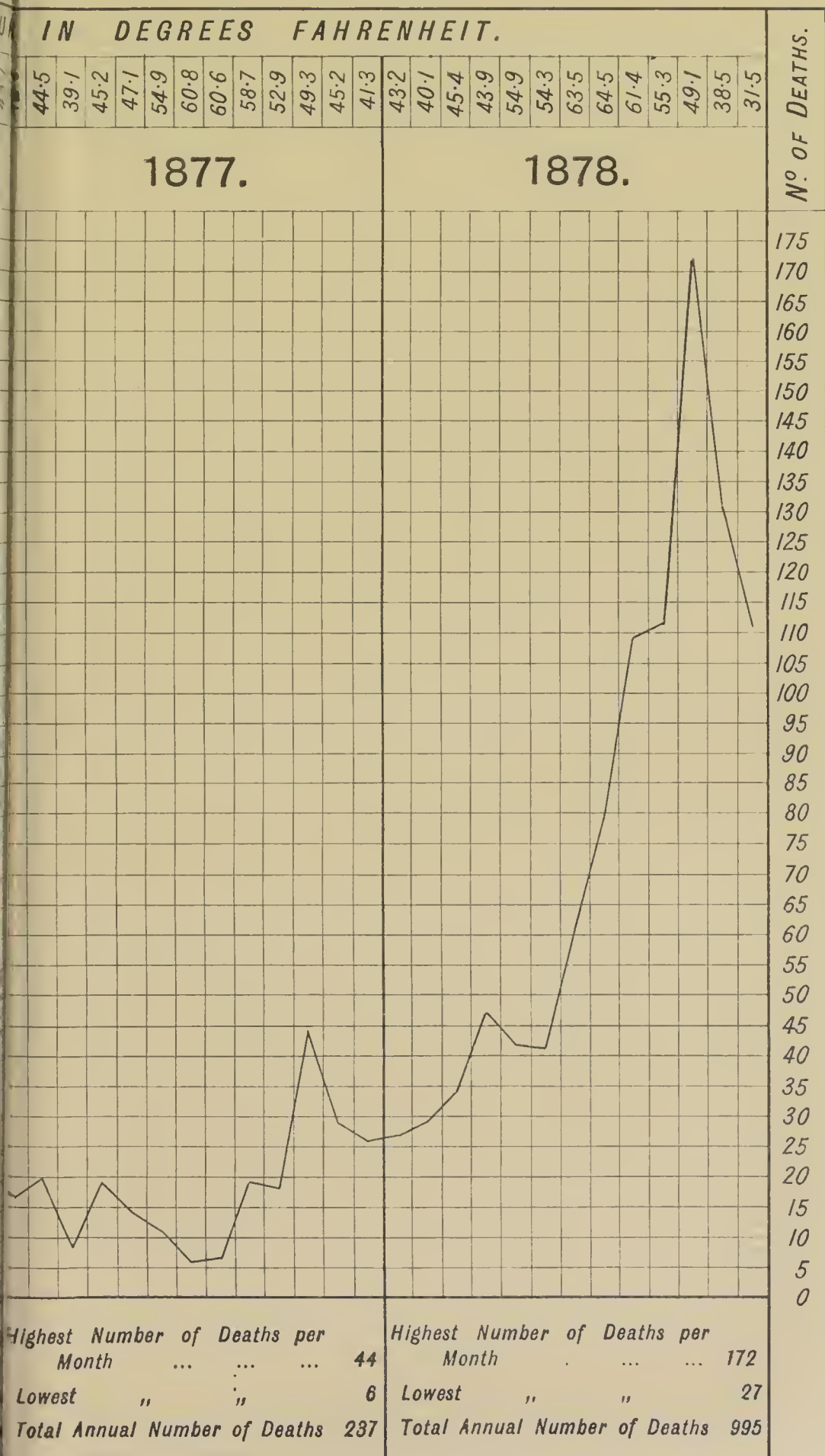


## DEATHS FROM SCARLET FEVER IN LUNAR M



AT I.

MONTHS DURING THE FOUR YEARS, 1875-1878.

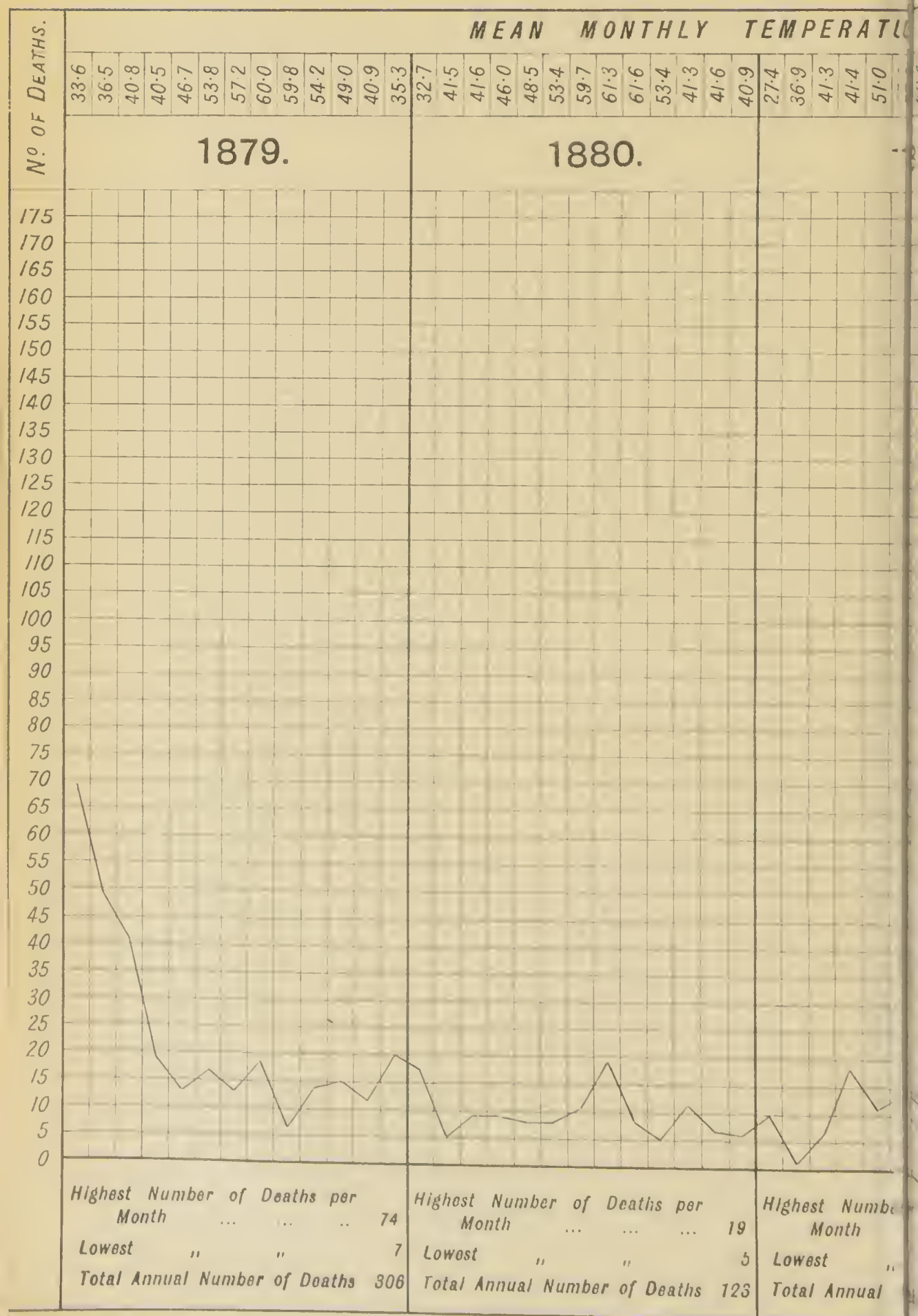








## DEATHS FROM SCARLET FEVER IN LUNAR

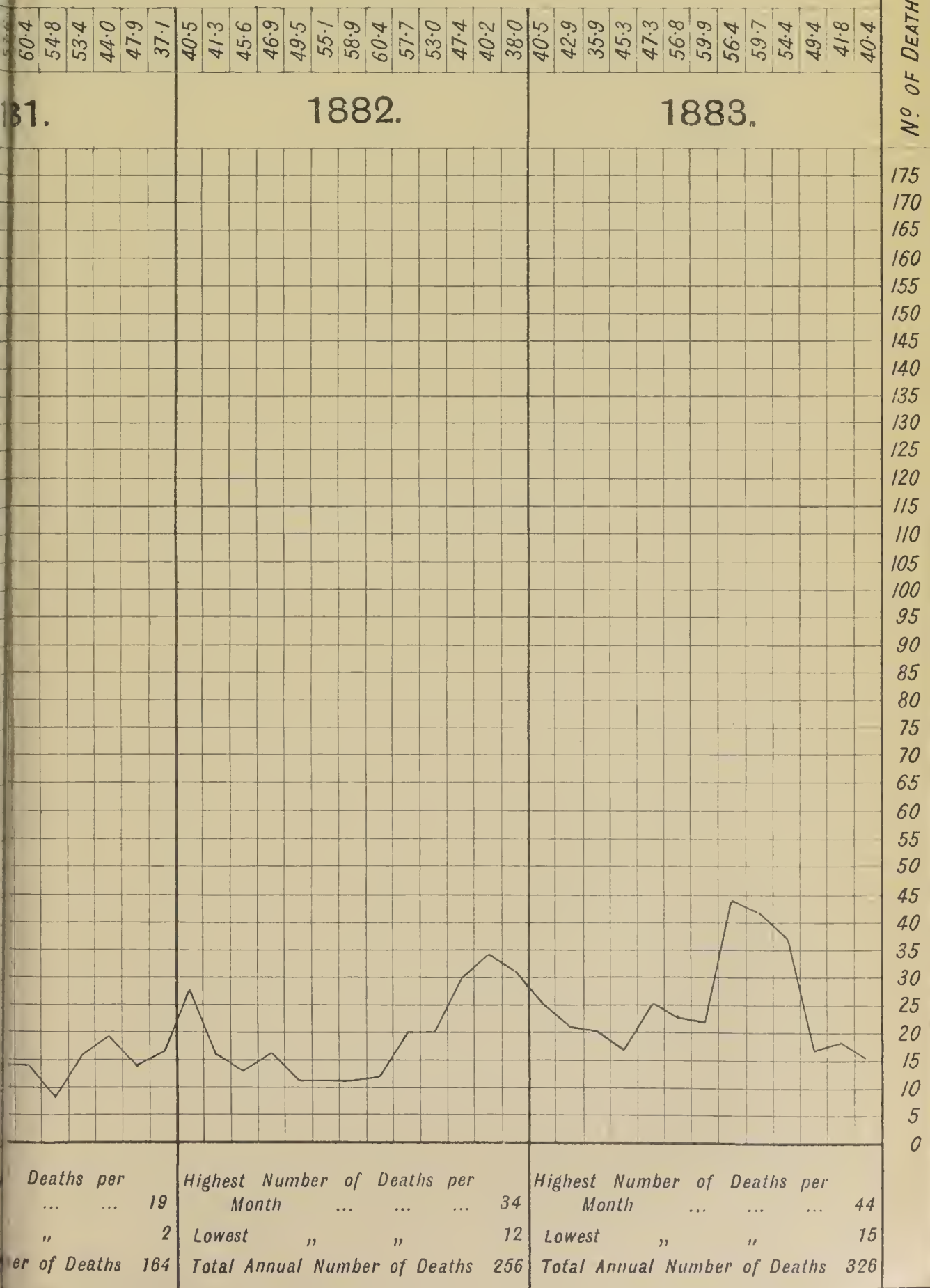




T 2.

MONTHS DURING THE FIVE YEARS, 1879-1883.

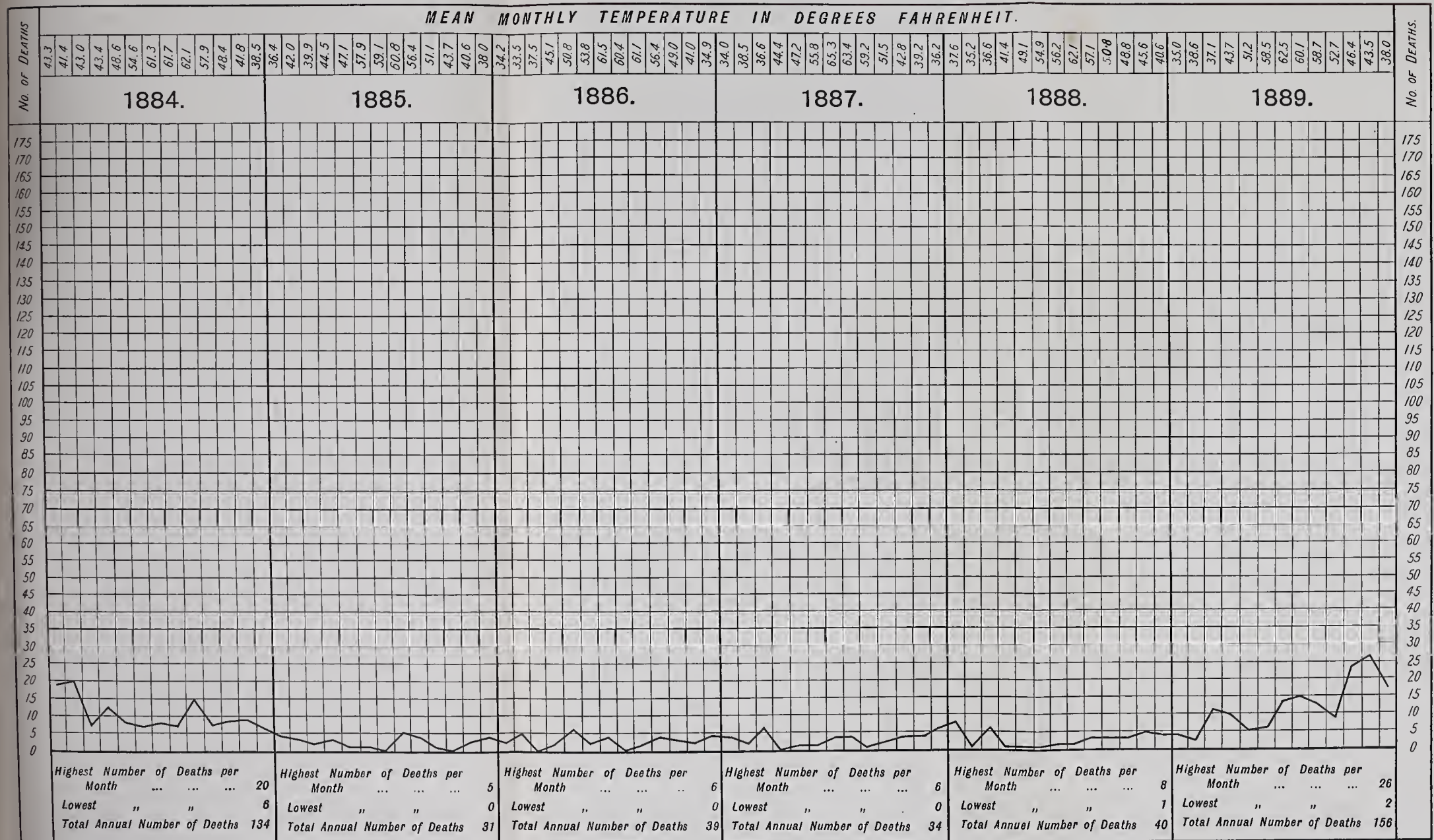
IN DEGREES FAHRENHEIT.





# CHART 3.

DEATHS FROM SCARLET FEVER IN LUNAR MONTHS DURING THE SIX YEARS, 1884-1889.









Fever Death-  
rate.

Death-rate from Fever is 0·10 per 1,000, the lowest in my records, which extend over twenty years. In 1888 the rate was 0·14, while the average of the twenty years since 1870 is 0·32. In twenty large English Towns the Death-rate from Fever was 0·19, exactly the same as in the previous year, and 0·9 above our rate.

The following figures show the diminution in the Fever Death-rate, both in Birmingham and in twenty large towns:—

DEATH-RATE FROM FEVER PER 1,000 OF THE POPULATION.

Birmingham.						Twenty large towns.	
1870	...	...	·63	...	...	...	·90
1871	...	...	·53	...	...	...	·78
1872	...	...	·54	...	...	...	·60
1873	...	...	·57	...	...	...	·59
1874	...	...	·56	...	...	...	·58
1875	...	...	·56	...	...	...	·52
1876	...	...	·40	...	...	...	·45
1877	...	...	·38	...	...	...	·42
1878	...	...	·38	...	...	...	·42
1879	...	...	·22	...	...	...	·29
1880	...	...	·21	...	...	...	·30
1881	...	...	·16	...	...	...	·31
1882	...	...	·21	...	...	...	·36
1883	...	...	·20	...	...	...	·33
1884	...	...	·19	...	...	...	·28
1885	...	...	·18	...	...	...	·22
1886	...	...	·15	...	...	...	·22
1887	...	...	·18	...	...	...	·21
1888	...	...	·14	...	...	...	·19
1889	...	...	·10	...	...	...	·19

Map.

The fatal cases of Typhoid Fever and their positions in the City are indicated by blue crosses on the Map appended to the Report.

SMALL-POX.

Smallpox

Not a single case of Small-pox has occurred in Birmingham. Never before have I had the pleasure of recording that the disease has for twelve months been quite unknown among us.

The year 1889 has been characterised by a comparative absence of Small-pox generally, only 28 deaths having been registered from it in the whole of England and Wales.



DEATHS AND DEATH-RATES FROM SMALLPOX PER 100,000 OF THE Twenty large towns compared  
POPULATION IN 20 LARGE ENGLISH TOWNS.

Town.	Population.	Deaths from Smallpox in the year 1889.	1889.	Rate per 100,000.		1886.
				1888.	1887.	
London ... ..	4,351,738	1	0·0	0·2	0·2	0·1
Brighton ... ..	121,807	0	0·0	0·0	0·0	0·0
Portsmouth ... ..	141,253	2	1·4	0·0	2·2	0·7
Norwich ... ..	94,510	0	0·0	0·0	0·0	0·0
Plymouth ... ..	78,225	0	0·0	0·0	0·0	0·0
Bristol ... ..	229,361	0	0·0	11·5	5·8	3·2
Wolverhampton ... ..	82,544	0	0·0	0·0	0·0	0·0
<b>Birmingham</b> ... ..	<b>454,835</b>	<b>0</b>	<b>0·0</b>	<b>0·0</b>	<b>0·5</b>	<b>0·0</b>
Leicester ... ..	150,520	0	0·0	0·0	0·0	0·0
Nottingham ... ..	237,812	0	0·0	5·2	0·0	0·9
Liverpool ... ..	606,562	1	0·2	0·2	0·2	4·9
Manchester.. ... ..	378,800	1	0·3	5·8	1·6	0·3
Salford ... ..	234,283	0	0·0	0·0	0·0	0·0
Oldham ... ..	142,405	0	0·0	10·1	0·0	0·0
Bradford ... ..	235,056	1	0·4	0·9	0·0	0·0
Leeds ... ..	357,449	1	0·3	5·1	0·3	0·3
Sheffield ... ..	327,227	0	0·0	126·8	87·9	0·0
Hull ... ..	208,017	0	0·0	9·4	1·0	0·0
Sunderland... ..	134,193	0	0·0	0·8	0·0	0·0
Newcastle-on-Tyne	160,983	0	0·0	0·0	0·6	0·0
In 20 towns ... ..	8,727,580	7	0·1	6·2	3·7	0·6

The number of Cases and Deaths in each quarter since the year 1871 is as follows:—

Cases and  
Deaths in the  
City from 1871

DATE.		Cases.		Deaths.	
1871.					
November 11th to end of year ...	...	359		43	
	Total ...	—	359	—	43
1872.					
1st Quarter	...	798		96	
2nd "	...	632		92	
3rd "	...	355		67	
4th "	...	192		44	
	Total ...	—	1,977	—	299
1873.					
1st Quarter	...	171		29	
2nd "	...	246		37	
3rd "	...	124		18	
4th "	...	253		38	
	Total ..	—	794	—	122
1874.					
1st Quarter	...	757		123	
2nd "	...	1,303		196	
3rd "	...	1,059		165	
4th "	...	672		153	
	Total ...	—	3,791	—	637

DATE				Cases.	Deaths
1875					
1st Quarter	...	...	...	366	85
2nd "	...	...	...	347	72
3rd "	...	...	...	95	14
4th "	...	...	...	16	2
Total				824	173
1876.					
1st Quarter	...	...	...	2	0
2nd "	...	...	...	2	0
3rd "	...	...	...	2	0
4th "	...	...	...	5	0
Total				11	0
1877.					
1st Quarter	...	...	...	7	1
2nd "	...	...	...	20	3
3rd "	...	...	...	20	3
4th "	...	...	...	3	1
Total				50	8
1878.					
1st Quarter	...	...	...	3	0
2nd "	...	...	...	4	0
3rd "	...	...	...	10	2
4th "	...	...	...	10	3
Total				27	5
1879.					
1st Quarter	...	...	...	1	0
2nd "	...	...	...	0	0
3rd "	...	...	...	3	0
4th "	...	...	...	0	0
Total				4	0
1880.					
1st Quarter	...	...	...	2	0
2nd "	...	...	...	5	1
3rd "	...	...	...	8	1
4th "	...	...	...	3	0
Total				18	2
1881.					
1st Quarter	...	...	...	5	5
2nd "	...	...	...	9	1
3rd "	...	...	...	2	0
4th "	...	...	...	0	0
Total				16	6
1882.					
1st Quarter	...	...	...	0	0
2nd "	...	...	...	43	6
3rd "	...	...	...	33	9
4th "	...	...	...	13	2
Total				89	17
1883.					
1st Quarter	...	...	...	48	7
2nd "	...	...	...	152	9
3rd "	...	...	...	567	54
4th "	...	...	...	435	40
Total				1,202	110

DATE.				Cases.	Deaths.	
1884.						
1st Quarter	...	..	...	384	54	
2nd "	...	...	...	64	8	
3rd "	...	...	...	13	1	
4th "	...	...	...	10	1	
Total				...	471	64
1885.						
1st Quarter	..	...	...	69	12	
2nd "	...	...	...	4	0	
3rd "	...	...	..	9	0	
4th "	...	...	...	2	0	
Total				...	84	12
1886.						
1st Quarter	...	...	...	1	0	
2nd "	...	...	...	1	0	
3rd "	...	...	...	0	0	
4th "	...	...	...	0	0	
Total				...	2	0
1887.						
1st Quarter	...	...	...	0	0	
2nd "	...	...	...	1	1	
3rd "	...	...	...	1	0	
4th "	...	...	...	10	1	
Total				...	12	2
1888.						
1st Quarter	...	...	...	13	0	
2nd "	...	...	...	4	0	
3rd "	...	...	...	1	0	
4th "	...	...	...	0	0	
Total				...	18	0
1889.						
1st Quarter	...	...	...	0	0	
3rd "	...	...	...	0	0	
3rd "	...	...	...	0	0	
4th "	...	...	...	0	0	
Total				...	0	0
Grand Total				...	9,749	1,500

#### DISEASE MAP.

As usual I append to my Report a Map, marked with spots and crosses to show the distribution over the City of the Deaths from three of the Zymotic diseases, viz.: Scarlet Fever, Measles, and Typhoid Fever. As is always the case, the centre of the town, largely taken up by business premises and containing comparatively few dwelling-houses, is almost entirely free from fatal cases of these diseases. The only other portion of the town which enjoys a similar immunity comprises the outlying part of Rotton Park Ward, and almost the whole of Edgbaston Ward. Over the remainder of the map the marks are spread with considerable regularity, the only part in which there is any approach to aggregation being in the neighbourhood of Great Francis Street and Bloomsbury Street.



Parasitic and  
Dietic Diseases.

## II.—*PARASITIC*, AND III.—*DIETIC DISEASES*.

The Deaths allotted to these two unimportant classes of disease together number only 64, yet this is twice as many as in 1888, and compares with 57 in 1887.

## IV.—*CONSTITUTIONAL DISEASES*.

Constitutional  
Diseases.

The Deaths from these diseases have risen in number from 1,247 to 1,286, an increase of 39. They are equal to a Death-rate of 2·8 per 1,000, which is identical with the rates of the three previous years. The mortality from this class of diseases is indeed remarkably constant, the numbers of Deaths from the particular diseases included in it being little different from those of the preceding year.

## V.—*DEVELOPMENTAL DISEASES*.

Developmental  
Diseases.

Rather more Deaths, 675 against 656, have occurred from Developmental diseases. They give a Death-rate of 1·5 per 1,000. The number of Deaths from Premature Birth is rather higher than in 1888, while fewer deaths from Old Age have occurred.

## VI.—*LOCAL DISEASES*.

Local Diseases.

This large and important class comprises so many diseases that it is not surprising to find it claims 48·6 per cent. of the total mortality. The Deaths from diseases in it numbered last year 4,060, against 3,971, and give a Death-rate of 8·9 per 1,000, exactly the same as in 1888. Considerable increases have taken place in the numbers of Deaths from Bright's Disease and affections of the stomach, but on the other hand there has been a lessened mortality from Bronchitis and Inflammation of the Brain.

## VII.—*VIOLENT DEATHS*.

Violent Deaths.

These have risen from 341 in 1888 to 359, chiefly owing to a larger number of Deaths from accidental burns. They are equal to a rate of 0·8 per 1,000 of the population, identical with that for the previous year.

## VIII.—*DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES*.

Deaths from  
ill-defined and  
not specified  
causes.

Only 621 Deaths have had to be placed in this unsatisfactory class, against 618 in 1888, 715 in 1887, and 713 in

1886. As I think many Deaths placed in this class might often have been better defined, I am glad to record a continued reduction in the number of Deaths allotted to it.

### CERTIFICATION OF CAUSES OF DEATH.

The percentage of uncertified Deaths, which was higher last year than in any recent years, has, I am glad to find, fallen from 2·6 in 1888 to 2·2, a lower figure than in any year since 1884. The chief reduction has taken place in the Sub-districts of St. Martin, All Saints, and Edgbaston, the percentage in the last named being now the lowest in the whole City. Slight increases have occurred in Ladywood, Deritend, and Duddeston Sub-districts.

Certification of  
causes of Death

Particulars respecting the certification of the causes of Death in each Registration Sub-District and in the whole City will be found in the subjoined Table :—

Registration Sub-Districts.	Total Deaths.	Certified by		Not Certified.	Proportion per cent. of Deaths.		
		Registered Medical Practitioners.	Coroner.		Certified by		
					Registered Medical Practitioners.	Coroner.	Not Certified.
City of Birmingham.	8,352	7,497	653	202	89·8	7·8	2·4
Ladywood ... ..	995	885	80	30	89·0	8·0	3·0
St. Thomas ... ..	712	591	100	21	83·0	14·0	3·0
St. Martin ... ..	703	628	66	9	89·3	9·4	1·3
St. George ... ..	1,375	1,125	186	54	82·5	13·6	3·9
All Saints ... ..	1,631	1,525	73	33	93·5	4·5	2·0
Deritend ... ..	1,502	1,370	106	26	91·2	7·1	1·7
Duddeston ... ..	1,172	1,072	74	26	91·5	6·3	2·2
Edgbaston ... ..	262	247	12	3	94·3	4·6	1·1

The Table on the next page gives full details of the mortality from the numerous causes of Deaths, showing the numbers at the various ætal periods, and in the several Registration Sub-Districts, as well as the totals for the whole City.

DEATHS REGISTERED IN THE CITY OF BIRMINGHAM DURING THE  
YEAR ENDING DECEMBER 31ST, 1889.

1889.	AGES.						REGISTRATION SUB-DISTRICTS.								City.
	0-1	1-5	5-20	20-40	40-60	60 and up.	Ladywood.	St. Thomas.	St. Martin.	St. George.	All Saints.	Deritend.	Duddeston.	Edgbaston.	
ALL CAUSES	2396	1395	489	977	1405	1690	995	712	703	1375	1631	1502	1172	262	8352
<b>I.—Specific Febrile, or Zymotic Diseases.</b>															
<b>1.—MIASMATIC DISEASES.</b>															
Smallpox .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Measles .. .. .	34	157	6	..	..	..	23	12	20	30	28	40	42	2	197
Scarlet Fever .. .. .	5	93	55	3	..	..	6	3	6	8	118	8	6	1	156
Typhus Fever .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Whooping Cough .. .. .	116	156	7	..	..	..	40	21	41	35	26	69	46	1	279
Diphtheria .. .. .	5	23	16	4	2	..	7	3	2	6	6	16	7	3	50
Simple, Continued, or Ill-defined Fever .. .. .	..	3	1	..	..	..	..	1	1	1	..	1	..	..	4
Enteric or Typhoid Fever .. .. .	..	5	19	13	1	2	6	2	3	8	5	9	6	1	40
Other Miasmatic Diseases .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
<b>2.—DIARRHEAL DISEASES.</b>															
Simple Cholera .. .. .	3	3	..	..	..	..	1	..	1	1	1	..	2	..	6
Diarrhea, Dysentery .. .. .	344	74	4	3	10	24	47	44	58	84	44	95	80	7	459
<b>3.—MALARIAL DISEASES.</b>															
Remittent Fever .. .. .	..	..	1	..	..	..	..	..	..	..	..	1	..	..	1
Ague .. .. .	..	1	..	..	..	..	..	1	..	..	..	..	..	..	1
<b>4.—ZOOGENOUS DISEASES.</b>															
Cowpox and effects of Vaccination .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other Diseases ( <i>e.g.</i> , Hydrophobia, Glanders, Splenic Fever) .. .. .	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1
<b>5.—VENEREAL DISEASES.</b>															
Syphilis .. .. .	46	5	..	2	..	1	5	7	7	8	11	11	5	..	54
Gonorrhœa, Stricture of Urethra .. .. .	..	..	..	1	6	3	..	3	..	3	3	1	..	..	10
<b>6.—SEPTIC DISEASES.</b>															
Erysipelas .. .. .	4	..	..	1	3	2	..	..	1	1	2	2	2	2	10
Pyæmia, Septicæmia .. .. .	..	1	3	9	1	1	2	2	..	1	3	4	3	..	15
Puerperal Fever .. .. .	..	..	..	4	..	..	..	..	..	2	..	2	..	..	4
<b>II.—Parasitic Diseases.</b>															
Thrush, and other Vegetable Parasitic Diseases .. .. .	10	..	..	..	..	..	6	..	2	..	1	1	..	..	10
Worms, Hydatids, and other Animal Parasitic Diseases .. .. .	..	..	..	1	..	..	1	..	..	..	..	..	..	..	1
<b>III.—Dietic Diseases.</b>															
Want of Breast Milk, Starvation .. .. .	25	4	..	..	..	..	2	4	4	9	7	2	1	..	29
Scurvy .. .. .	..	..	1	..	..	..	..	1	..	..	..	..	..	..	1
Chronic Alcoholism .. .. .	..	..	..	6	8	3	1	2	3	4	3	2	2	..	17
Delirium Tremens .. .. .	..	..	..	3	3	..	1	1	..	1	1	..	1	1	6
<b>IV.—Constitutional Diseases.</b>															
Rheumatic Fever, Rheumatism of the Heart .. .. .	..	1	9	10	4	2	7	3	2	..	5	4	1	4	26
Rheumatism .. .. .	..	..	4	3	4	5	..	..	..	3	9	3	1	..	16
Gout .. .. .	..	..	..	..	2	2	1	..	..	..	2	..	..	..	4
Rickets .. .. .	9	13	1	..	..	..	4	2	..	..	3	7	..	..	23
Cancer, Malignant Disease .. .. .	..	..	1	26	150	105	44	24	17	35	67	47	24	24	282
Tuberc Mesenterica .. .. .	38	30	2	..	..	..	6	4	10	15	9	15	9	2	70
Tubercular Meningitis, Hydrocephalus .. .. .	25	29	10	4	..	..	16	5	9	13	..	13	10	2	68
Phthisis .. .. .	6	13	70	332	221	42	57	57	53	106	192	120	90	9	684
Other forms of Tuberculosis, Scrofula .. .. .	13	20	13	11	4	2	11	1	8	13	13	10	6	1	63



TABLE A—(continued).

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DEATHS REGISTERED IN THE CITY OF BIRMINGHAM DURING THE  
YEAR ENDING DECEMBER 31ST, 1889—continued.

1889.	AGES.						REGISTRATION SUB-DISTRICTS.								City.
	0-1	1-5	5-20	20-40	40-60	60 and up.	Ladywood.	St. Thomas.	St. Martin.	St. George.	All Saints.	Deritend.	Duddeston.	Edgbaston.	
IV.—Constitutional Dis.—continued.															
Purpura, Hæmorrhagic Diathesis ..	1	1	2	..	..	..	..	..	..	1	1	1	1	..	4
Anæmia, Chlorosis, Leucocythæmia ..	..	1	2	4	9	5	4	3	..	3	4	3	2	..	21
Glycosuria, Diabetes Mellitus ..	..	..	1	10	6	6	1	2	1	7	9	2	1	..	23
Other Constitutional Diseases ..	..	..	1	..	..	1	1	1	..	..	..	..	..	..	2
V.—Developmental Diseases.															
Premature Birth .. .. .	227	..	..	..	..	..	31	16	13	29	43	68	22	5	227
Atlectasis .. .. .	40	..	..	..	..	..	6	2	2	9	3	9	9	..	40
Congenital Malformations..	22	..	..	..	..	..	6	3	..	2	3	4	4	..	22
Old Age.. .. .	..	..	..	..	1	385	37	18	25	56	149	43	37	21	386
VI.—Local Diseases.															
1.—DISEASES OF NERVOUS SYSTEM.															
Inflammation of Brain or Membranes ..	55	59	28	12	14	1	18	10	15	33	32	31	25	5	169
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis ..	..	..	..	21	118	183	33	19	20	55	84	54	32	25	322
Insanity, General Paralysis of the Insane ..	..	..	3	2	11	7	..	1	2	1	15	..	2	2	23
Epilepsy .. .. .	1	1	14	17	7	4	5	4	10	3	11	5	3	3	44
Convulsions .. .. .	137	36	4	1	..	..	23	13	20	31	12	46	31	2	178
Laryngismus Stridulus (Spasm of Glottis) ..	25	9	2	..	..	1	6	4	2	4	3	7	7	4	37
Disease of Spinal Cord, Paraplegia, Paralysis Agitans .. .. .	..	..	1	11	10	17	2	4	..	5	17	6	5	..	39
Other Diseases of Nervous System ..	7	13	7	5	9	7	4	5	2	6	10	11	7	3	48
2.—DISEASES OF ORGANS OF SPECIAL SENSE. (e.g., of Ear, Eye, and Nose).															
	2	1	4	3	2	..	..	2	..	3	2	1	3	1	12
3.—DISEASES OF CIRCULATORY SYSTEM.															
Pericarditis .. .. .	..	..	2	1	..	2	3	..	..	..	..	2	..	..	5
Acute Endocarditis .. .. .	..	..	4	3	2	..	..	2	..	4	1	..	1	1	9
Valvular Diseases of Heart .. .. .	..	..	10	28	33	27	13	6	1	18	24	28	5	3	98
Other Diseases of Heart .. .. .	13	7	23	61	172	193	45	49	45	62	103	70	67	28	469
Aneurism .. .. .	..	..	..	3	9	3	1	1	..	5	3	3	2	..	15
Embolism, Thrombosis .. .. .	..	..	..	1	2	4	..	1	..	1	2	2	1	..	7
Other Diseases of Blood Vessels ..	1	1	..	1	2	5	..	3	..	1	3	1	1	1	10
4.—DISEASES OF RESPIRATORY SYSTEM															
Laryngitis .. .. .	5	11	6	..	2	2	3	3	1	3	3	11	..	2	26
Croup .. .. .	8	41	12	..	..	..	12	6	6	5	5	21	5	1	61
Emphysema, Asthma .. .. .	..	..	..	5	12	9	3	3	1	5	3	..	11	..	26
Bronchitis .. .. .	300	189	7	32	169	314	129	73	89	170	155	198	174	23	1011
Pneumonia .. .. .	91	180	32	82	85	71	53	44	56	84	109	106	70	19	541
Pleurisy .. .. .	1	3	2	6	11	10	2	3	1	6	11	2	6	2	33
Other Diseases of Respiratory System ..	18	19	4	5	20	14	12	9	16	9	9	14	11	..	80
5.—DISEASES OF DIGESTIVE SYSTEM.															
Dentition .. .. .	41	28	..	..	..	..	12	7	7	11	9	9	14	..	69
Sore Throat, Quinsy .. .. .	1	4	6	1	1	..	2	..	..	..	1	5	5	..	13
Diseases of Stomach .. .. .	48	7	5	9	20	13	16	10	2	27	18	17	10	2	102
Enteritis .. .. .	32	12	3	1	2	6	8	7	2	3	8	19	6	3	56
Obstructive Diseases of Intestines ..	4	..	8	5	15	11	4	9	3	12	5	4	5	1	43
Peritonitis .. .. .	1	4	3	13	9	5	8	4	3	3	8	5	4	..	35
Ascites .. .. .	..	..	..	..	1	..	..	..	..	..	..	1	..	..	1
Cirrhosis of Liver .. .. .	..	1	..	12	21	16	5	4	4	9	6	9	6	7	50
Jaundice, and other Diseases of Liver ..	12	..	..	12	14	24	9	6	8	15	6	13	4	1	62
Other Diseases of Digestive System ..	17	5	2	2	10	9	7	7	6	5	12	6	2	..	45
6.—DISEASES OF LYMPHATIC SYSTEM (e.g., of Lymphatics and Spleen).															
	1	..	1	1	..	..	..	..	1	..	1	1	..	..	3
7.—DISEASES OF GLAND-LIKE ORGANS OF UNCERTAIN USE (e.g., Bronchocele, Addison's Disease).															
	..	..	1	..	1	1	..	..	..	..	2	1	..	..	3



DEATHS REGISTERED IN THE CITY OF BIRMINGHAM DURING THE  
YEAR ENDING DECEMBER 31ST, 1889—continued.

1889.	AGES.						REGISTRATION SUB-DISTRICTS.								City.
	0-1	1-5	5-20	20-40	40-60	60 and up.	Ladywood.	St. Thomas.	St. Martin.	St. George.	All Saints.	Deritend.	Duddeston.	Edgbaston.	
VI.—Local Diseases—continued.															
8.—DISEASES OF URINARY SYSTEM.															
Nephritis .. .. .	2	3	5	12	14	13	5	5	1	11	9	11	5	2	49
Bright's Disease, Albuminuria .. .. .	..	2	2	22	40	33	12	12	6	12	23	13	17	4	99
Disease of Bladder or of Prostate .. .. .	1	1	1	4	3	10	3	4	1	5	4	1	..	2	20
Other Diseases of the Urinary System .. .. .	..	1	1	6	7	7	3	4	3	7	2	1	1	1	22
9.—DISEASES OF REPRODUCTIVE SYSTEM.															
(A) Of Organs of Generation.															
Male Organs .. .. .	..	..	..	1	1	..	..	..	..	2	..	..	..	..	2
Female Organs .. .. .	1	..	1	11	5	2	8	1	..	2	2	5	2	..	20
(B) Of Parturition.															
Abortion, Miscarriage .. .. .	..	..	..	7	..	..	..	..	..	1	2	4	..	..	7
Puerperal Convulsions .. .. .	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1
Placenta Prævia, Flooding .. .. .	..	..	..	3	1	..	2	..	..	1	..	..	1	..	4
Other Accidents of Child-birth .. .. .	..	..	..	28	3	..	..	2	3	5	4	6	9	12	31
10.—DISEASES OF BONES AND JOINTS.															
Caries, Necrosis .. .. .	..	2	5	6	3	1	1	1	2	4	3	3	3	..	17
Arthritis, Ostitis, Periostitis .. .. .	..	..	2	1	1	..	..	..	..	4	..	..	..	..	4
Other Diseases of Bones and Joints .. .. .	..	1	3	..	1	1	1	2	1	1	..	1	..	..	6
11.—DISEASES OF INTEGUMENTARY SYSTEM.															
Carbuncle, Phlegmon .. .. .	1	..	..	1	3	..	2	1	..	2	..	..	..	..	5
Other Diseases of Integumentary System .. .. .	5	4	1	1	6	11	2	1	2	6	4	7	6	..	28
VII.—Deaths from Violence.															
1.—ACCIDENT OR NEGLIGENCE.															
Fractures and Contusions .. .. .	1	7	8	14	18	30	5	16	..	34	10	6	4	3	78
Gunshot Wounds .. .. .	..	..	..	3	..	..	..	..	..	2	..	..	1	..	3
Cut, Stab .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Burn, Scald .. .. .	2	47	14	1	7	2	2	23	..	44	1	2	1	..	73
Poison .. .. .	..	2	..	2	3	..	1	..	1	2	..	1	1	1	7
Drowning .. .. .	3	1	12	5	5	1	7	2	5	..	4	3	5	1	27
Suffocation .. .. .	104	3	..	2	4	1	15	12	12	22	13	28	12	..	114
Otherwise .. .. .	5	3	..	4	2	2	1	4	1	4	1	1	4	..	16
2.—HOMICIDE.															
Manslaughter .. .. .	1	..	..	4	3	..	1	..	..	5	1	..	1	..	8
Murder .. .. .	..	..	..	..	2	1	1	..	..	1	..	1	..	..	3
3.—SUICIDE.															
Gunshot Wounds .. .. .	..	..	..	3	..	..	1	..	1	..	..	1	..	..	3
Cut, Stab .. .. .	..	..	..	1	4	3	1	3	1	1	..	1	..	..	8
Poison .. .. .	..	..	..	..	4	..	..	1	1	3	1	1	..	1	8
Drowning .. .. .	..	..	..	..	2	..	1	1	..	..	..	..	..	..	2
Hanging .. .. .	..	..	..	2	2	2	..	..	1	1	..	3	..	1	6
Otherwise .. .. .	..	..	1	..	1	1	1	..	..	..	2	..	..	..	3
4.—EXECUTION.															
Hanging .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
VIII.—Deaths from Ill-Defined and not Specified Causes.															
Dropsy .. .. .	..	..	..	3	..	1	1	..	..	..	1	..	2	..	4
Debility, Atrophy, Inanition .. .. .	228	2	..	..	3	2	35	14	17	29	27	29	79	5	235
Marasmus .. .. .	232	46	1	..	..	1	37	29	26	50	33	37	68	..	280
Mortification .. .. .	1	..	..	..	2	1	1	..	..	2	1	..	..	..	4
Tumour .. .. .	..	1	5	16	26	10	22	5	3	10	10	6	1	1	58
Abscess .. .. .	5	2	2	1	5	1	3	2	1	1	1	2	1	5	16
Hæmorrhage .. .. .	3	..	..	1	..	..	..	..	..	..	..	2	2	..	4
Sudden Death (cause not ascertained) .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other not Specified or Ill-defined Causes .. .. .	7	3	1	1	5	3	2	..	2	1	8	4	..	3	20

## METEOROLOGY.

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The mean temperature for the year 1889 was  $48^{\circ}\cdot 0$ , almost identical with the average, there being only a small fractional difference; the mean for each of the two preceding years was below the average. The weather during the year was singularly seasonable, the winter months being cold, and spring, summer, and autumn particularly bright and warm. April was almost the only unpleasant exception. For six or seven years April has had a temperature far below the average, and it really seems to have altogether lost its character of a spring month, and its old associations of varied sunshine and shower.

The year under review, like each of the five foregoing years with the exception of 1886, was below the mean in rainfall, but the deficiency was not so marked as in 1888. Eight out of the twelve months had a rainfall lower than the average, January heading the list with the enormous deficit of 2.12 inches. The three spring months were the only months, except August, which had a rainfall above the average.

January had a mean temperature of  $36^{\circ}\cdot 4$  or  $0^{\circ}\cdot 2$  below the average. The first week was very cold, in fact the coldest during the winter, the rest of the month being fairly open. The weather was pretty settled, barometric readings ran high, and no fall of snow of any importance occurred. February was an unsettled and cold month, being  $2^{\circ}\cdot 0$  below the mean. It was also wet, snow being very prevalent. One of the heaviest falls recorded for some years occurred on the 10th, the depth of snow reaching about ten inches, which is equal to 0.70 inch of rain; the fall continued uninterruptedly for thirty-six hours. There were twelve days during February on which snow fell. March, the mean temperature of which was below the average, may be divided into two parts, the first half being excessively cold, and the second particularly mild. On the whole the weather was bright, fine and dry, most of the rainfall of the month being registered on two days only. April may be appropriately described as a wretched month; like its predecessors in late years it has forsaken all its old beauty and variety, and now treats us to thirty days of dull, cold, wet and uninteresting weather. Strong easterly winds and rain are its chief modern accompaniments. The advent of May was quite a relief from the dismal conditions which held in April. May was one of the grandest months experienced for many years, every day bringing beautiful sunshiny weather. On nine days the tem-

Temperature  
of year.

Rainfall of year.

January.

February.

March.

April.

May.

perature reached  $70^{\circ}$  or upwards, a most unusual occurrence. There was a great quantity of rain, but the greater part fell at night and rendered the days all the more enjoyable. If May was a grand month it was only a match for June, which was the finest, driest and most enjoyable month of recent years. The rainfall was exceedingly light, while on twenty-three out of the thirty days the temperature reached or exceeded  $70^{\circ}$  — quite an unparalleled record — and the mean temperature of the month was as high as  $61^{\circ}\cdot0$ , or  $2^{\circ}\cdot6$  above the average. The highest temperature recorded during the month was  $81^{\circ}\cdot5$ . July had a mean temperature of  $60^{\circ}\cdot6$ , or  $1^{\circ}\cdot0$  below the average. The long spell of warm weather which had continued through May and June lasted till July 12th, when it temporarily came to an end. The remainder of July was for the most part dull and showery. The highest individual temperature of the year was recorded in this month, viz.,  $83^{\circ}$ . August was not a particularly fine month, the mean temperature being  $1^{\circ}\cdot4$  under the average. The low mean temperature was attributable to the dulness of most of the days in the month. The mean temperature of September was slightly above the average and the weather was very fair. On eight days in this month a temperature of  $70^{\circ}$  or more was registered. The minimum temperatures at night were low, running down to  $34^{\circ}$ . October was cold, being  $1^{\circ}\cdot7$  below the average. The first fortnight was characterised by misty weather, and the latter part was unsettled and rainy. November was an improvement on the previous month, having a mean temperature as high as  $3^{\circ}\cdot4$  in excess of the average, which mean would have been considerably higher but for a very cold spell of frost during the last five days of the month. The month was warm, very bright and genial, an unusual circumstance at this time of the year. December was a very fair and mild month, the mean temperature affording no idea of the actual weather experienced, as at night low minima were observed, while the day temperature was as a rule fairly high. The lowest temperature recorded was  $20^{\circ}\cdot5$ , or  $11^{\circ}\cdot5$  of frost. There was only one fall of snow, when a depth of three inches was measured.

#### Rainfall.

The rainfall for 1889 amounted to 28·55 inches, which is 3·38 inches below the mean annual rainfall for Birmingham. January, February, June, July, September, October, November, and December all fell short of the average—January particularly so, showing a deficit of 2·12 inches. March, April, May, and August are the only months having a rainfall in excess of their usual allowance. The heaviest daily fall occurred in March, when 1·61 inches was read. October furnishes the greatest number of rainy days in one month, viz., twenty-four, and this is the more remarkable as the total rainfall for the month was below the average.



On the 11th of August a succession of heavy thunder-  
storms, accompanied by the most vivid lightning and deafening  
thunder passed over Birmingham, causing a great deal of  
damage to property, but fortunately no loss of life. Thunder-  
storms of less consequence visited us on several days in April,  
May, and June. There were no dense fogs during the year,  
and no gales of wind of any importance.

The following Table shows the temperature and rainfall for  
each month during the past year, and also the variations from  
the monthly averages:—

MONTHS.	TEMPERATURE.			RAINFALL.		
	Mean Tempera- ture in Degrees and Parts.	Average for 20 years, 1861-1880 inclusive	Above or below the average.	Rainfall for Month in Inches and Parts.	Average for 10 years 1867-1876 inclusive.	Above or below the average in Inches and Parts.
January .....	36°4	36°6	— 0°2	0·80	2·92	— 2·12
February .....	37·1	39·1	— 2·0	2·17	2·26	— 0·09
March .....	40·0	40·6	— 0·6	3·32	2·47	+ 0·85
April .....	44·3	47·2	— 2·9	3·41	2·01	+ 1·40
May .....	55·2	51·9	+ 3·3	3·92	2·27	+ 1·65
June .....	61·0	58·4	+ 2·6	0·65	2·28	— 1·63
July .....	60·3	61·6	— 1·0	2·15	2·88	— 0·73
August .....	59·1	60·5	— 1·4	2·94	2·54	+ 0·40
September .....	55·6	55·4	+ 0·2	2·52	3·67	— 1·15
October .....	46·5	48·2	— 1·7	3·11	3·33	— 0·22
November .....	43·7	40·3	+ 3·4	1·27	2·09	— 0·82
December .....	37·2	37·9	— 0·7	2·29	3·21	— 0·92
Year .....	48·0	48·2	— 0·2	28·55	31·93	— 3·38

I am indebted to the late Mr. Plant for the average  
temperatures of the twenty years 1861-1880.

On the following page is given a Table showing the total  
mortality, and mortality at various ages and from different  
diseases, together with barometric and thermometric readings  
for each week of the year; and at the beginning of the Report  
I insert a Chart, giving a graphic representation of the relation  
between meteorological conditions and mortality.



METEOROLOGY, BIRTHS, DEATHS, AND MORTALITY FROM CERTAIN  
PREVALENT DISEASES FOR EACH WEEK OF 1889.

Number.	Week.	Temperature of the Air.		Air Pressure.	Horizontal Movement of Air in Miles.	Mean Humidity, complete Saturation = 100.	Rainfall in inches.	Births.	All Ages.	Deaths at			Deaths from																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		Highest during week.	Lowest during week.							Mean Temperature.	Extreme Range of Barometric Changes.	Under 1 year.	1 to 5 years.	Over 60.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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II.—SANITATION.

i. *Influences affecting or threatening to affect injuriously the Public Health.*

One of the chief of these influences is the accumulation of filth in various ways, such as is brought about by the existence of ashpit middens, the throwing of refuse upon the surface of the streets, the keeping of animals in improper places, and the contamination of the atmosphere caused by the emission of dense smoke.

The removal of the midden privies in the town is being gradually proceeded with; 944 middens and the privies connected with them have been abolished during the past year, the substitute for the privies being most commonly the particular form of water-closet recommended in my Annual Report for 1886, which is the best adapted for use in cottage property, where the closet is outside the house, as it is not liable to be made ineffective in action by protracted frost, which often renders closets flushed from cisterns temporarily unworkable. Over 9,000 privy ashpits, however, still exist in the City, distributed among the Wards as follows:—

WARD.	No. of Ashpits still existing.		No. of Ashpits removed during 1889.	
Rotton Park ... ..	557	...	73	.
All Saints ... ..	776	...	55	
Ladywood ... ..	455	...	67	
St. Paul ... ..	360	...	49	
St. George ... ..	369	...	44	
St. Stephen ... ..	363	...	40	
St. Mary ... ..	167	...	28	
St. Bartholomew ... ..	330	...	11	
Market Hall ... ..	124	...	7	
St. Thomas ... ..	265	...	62	
St. Martin ... ..	243	...	119	
Edgbaston ... ..	1,792	...	94	
Deritend ... ..	833	...	35	
Bordesley ... ..	1,521	...	10	
Duddeston ... ..	512	...	75	
Nechells ... ..	758	...	175	
Total ... ..	9,425	...	944	

The deposition of refuse on road surfaces is objectionable from its unpleasantness as well as on the score of danger to health. Twenty-seven persons were summoned last year for such deposition. In most cases small fines were inflicted, amounting in the aggregate to £1 6s. 6d.

Much difficulty is found in preventing the keeping of animals, particularly fowls, in improper places. A large number of such are constantly removed, but only to be reinstated. Undoubtedly the nuisance from their being kept in improper



places is widely prevalent, and is a source of much dirt and disease. I am strongly of opinion that stringent measures should be taken to repress the practice.

Smoke.

As many as 5,095 observations have been made during the past year with a view to discovering excessive emissions of dense smoke from the chimneys of manufactories. Such discharges were noticed on 313 occasions; 172 manufacturers were cautioned not to repeat the offence, and 102 were summoned before the magistrates and subjected to fines in all amounting, together with costs, to £86.

Houses unfit for habitation in Springfield Street.

After several times inspecting the property in 21 and 22 courts, Springfield Street, owing to complaints of its defective condition, and finding that the houses were all so dilapidated as to have been vacated, except three of them, and that the owner obstinately refused to repair and do other necessary work, I reported to you in January, 1888, the desirability of applying for an order to close the property as unfit for human habitation. The application was duly made, and the order for closure obtained.

Nothing more was heard of this property until April, 1889, when I received a letter from the owner intimating that he was about to apply to the magistrates to rescind the order of closure which they had made upon him.

I then made another examination of the property, and found it in the condition described in the following report which I made to you.

"In nearly all the houses the new paper was put upon old ones; in some cases as many as ten old papers were covered by the new one. This is a most dangerous condition of things, and cannot be permitted. Some of the houses are not weather-proof, and therefore wet or damp. The cellar steps are in some cases very dangerous from dilapidation; a cellar shutter is broken from its hinges, and gives rise to much danger. When I visited, the main drain at the bottom of the manhole was broken and obstructed. Since then the Assistant Inspector has examined it, and states that the manhole is half full of rubbish. Whether the drain pipe has been repaired or not it is impossible to say; in any case it is destructive of the manhole to put rubbish into it, as it would prevent access to the drain in case of obstruction. The yards are unpaved, and, as long as they remain so, will neither be tidy nor healthy. A rain-water spout is broken, rendering a wall damp. The painting is done with very inferior paint, and it is laid on the woodwork without previously cleansing it, so that it will never dry, and rubs off when touched.

"Under these circumstances I am of opinion that the premises are still unfit for occupation, and that it is undesirable to support" the owner's "application to the magistrates for abrogation of their order."

In the month of May following, the owner's solicitor gave me notice that he should again apply for the rescinding of the magistrates' order, and I then made another examination of the property in order to ascertain whether sufficient improvement had been effected to justify your sanction, after which I reported to you in the following terms:—

Houses unfit for  
habitation in  
Springfield  
Street  
(continued).

“Some improvements have been effected, particularly the removal of the sticky non-drying paint from the woodwork, and the removal of the rubbish from the cellars. There are, however, still many defects, most of which should be remedied before the houses are allowed to be re-occupied. On our visit on the 8th instant we were unable to obtain admission to the premises; on the 9th instant we again visited, and I then observed the following conditions:—

“*At No. 55* there was bad plaster under the wall-paper in the downstairs room. Analysis of the plaster shows it to be composed of one part lime to 23·7 dirt, apparently street sweepings. The front wall was also wet, probably from defective spout outside. On the first-floor room there were nine layers of paper. The cellar was wet, both floor and walls, probably from a defective spout. There were four papers one on the other in the cupboard, which smelled offensively.

“*At No. 1, Back 53*, the wall was damp by the door and has been mended with plaster, which was wet and sandy, falling off at a touch.

“*At No. 6, Back 53*, the cupboard smelled offensively, the wall and floor were damp, as was also the cellar.

“*At No. 5, Back 53*, the pantry was damp and the plaster hollow, and about to fall off. There were brown fungoid growths on cracks in the ceiling of the first-floor room, showing dampness, and a wet spot on the ceiling of the attic from defective roof.

“*At No. 4, Back 55*, the pantry wall was damp, and there were eight old papers under the new one on the first-floor bedroom.

“*At Back 56*, the manhole is partly filled with rubbish, but I cannot speak to the condition of the pipe and trap, as they were covered over. The spout at the back, between Nos. 55 and 56, leaks, rendering the wall of the building wet all the way down.

“The following observations were afterwards made by Assistant Inspector Humphreys:—

“In eleven instances he found new papers put upon old ones, two walls were damp from defective spouting, two other cellar and pantry walls were damp, while an open spout traversed horizontally one of the attics, and there was a D-trap near to a house door. One of the drains was obstructed, and the ashtubs were filled with bricklayers' refuse and wall-paper, which the Corporation are not called upon to remove.”



Houses unfit for  
habitation in  
Springfield  
Street  
(continued).

The owner still maintained his attitude of non-compliance with reasonable demands for such improvement of the houses as was deemed necessary to render them fit for healthy occupation, and on the 7th June he applied, through his solicitor, to the magistrates for an order rescinding the order to close them. This application was opposed by Mr. Barham, principally on the ground that the filthy layers of paper had not been removed from the walls. The magistrates having a difficulty in appreciating the statements *pro* and *con*, decided to visit the property and inspect it for themselves, which they proceeded to do at once, accompanied by their clerk, the respective solicitors, the Inspector, Assistant Inspector, and myself. They were not long in becoming convinced of the utter unfitness of the houses for occupation, and after taking my evidence upon the facts they emphatically refused the application.

The property has at last, after nearly two years, been redeemed from the ruinous condition into which it ought never to have been allowed to fall, and no further opposition has been offered to its occupation being resumed.

Insanitary  
Houses in  
Coventry Road.

Another property in an insanitary condition was brought under my notice, upon which I reported to you on the 28th May, as follows:—

“My attention has been called by the tenant to the condition of the house, 704, Coventry Road, where it is alleged illness has existed in the family ever since they have occupied it. The Inspector, Assistant Inspector, and myself have all visited it. Some of the walls and floors are wet, partly from the dampness of the soil and partly from a water-pipe having burst some time ago, before the present tenancy commenced. The property, though new and appearing of fair quality to the superficial observer, is an excellent type of the ‘jerry’ order. It is constructed of flimsy and bad material with inferior workmanship, and as a result is prematurely falling to ruin. I could discover no damp course. On the walls was a fungus a couple of feet in length, the largest I ever saw, and the pantry and cellar were pervaded by a strong musty odour. The next house, which is vacant, is in precisely the same condition. The ventilating pipe of the water-closet consists of zinc socketed upon the lead soil pipe without jointing of any kind. At No. 704 the father and the children are said to have been ill with Rheumatism, Bronchitis, and Measles, and are about to leave. The house is certainly unfit for habitation in its present condition, as also is the one adjoining.”

Since my report, the level of the ground outside the houses has been lowered, and other causes of dampness removed, so that the houses have been restored to a sanitary condition, and are now occupied.

Houses unfit for  
habitation in  
Oxford Street.

On the 23rd of December, I brought under your notice a dilapidated, dirty, and unhealthy property in Oxford Street. My report was as follows:—

"I beg to report that I have inspected 3 and 4 Courts, Oxford Street, which contain twenty-eight houses, eight at the front and twenty at the back. The atmosphere on entering smelt distinctly of urine. The yard is only partially and defectively paved with pebbles lodging impurity, while the habits of the tenants are very dirty, resulting in the accumulation of much surface filth.

Houses unfit for  
habitation in  
Oxford Street  
(continued).

"The walls and ceilings of the houses are generally damp, owing to the late defects in the roofs, which have recently been patched up, but being very old they are not likely to be long weatherproof. The brickwork is dilapidated, the bricks are very porous, and no damp course exists in the walls.

"The stairs of No. 6 were broken and highly dangerous.

"The pan closets were dirty, and one pan was leaky, causing the floor to be covered with an offensive liquid.

"The lease has seven years to run next September.

"I consider that improvements in paving and closet accommodation are necessary, as well as various repairs in order to render the property sanitary and fit for healthy habitation. The yard should be paved with bricks laid in cement, and the pan privies converted into flush water-closets *at least*, but it appears to me that this is a case which properly comes under the provisions of sanitary legislation for reconstruction or closure."

On consideration of this report, your Committee came to the conclusion that my latter recommendation should be carried into effect. Accordingly, an application was made to the magistrates on the 31st January of this year, who gave an order for immediate closure of the whole property.

At the same time I reported upon another insanitary property, as follows:—

Houses unfit for  
habitation in  
Allison Street.

"I have also inspected 10 Court, Allison Street, where the property is old and dilapidated, the roofs are defective, the walls damp, and the houses indeed unfit for human habitation.

"The pavement is very defective and consists partly of brick and partly of pebbles.

"A wall has been shored up, but the supports are giving way, and it is dangerous.

"Three of the houses, seven in number, are already bricked up to prevent occupation."

Application was also made for the closing of these houses, and this has since been done.

It is not only old or neglected properties that are unfit for human habitation. The jerry-builder, if not carefully looked after, will put up structures which, though presenting a decent appearance to superficial observers, are totally unfit for

"Jerry" built  
property.

"Jerry" built  
property  
(continued)

occupation from a sanitary point of view. They may be built on an impure foundation with mortar consisting of dirt instead of sand, and only enough lime to "swear by"; while the drains in too many instances are "a delusion and a snare." A sample of mortar which I took from the property in Springfield Street and analysed, contained only one part of lime to twenty-four parts, not of sand, but, of dirt, apparently surface sweepings possibly containing every kind of objectionable animal impurity.

Prosecution by  
City Surveyor.

About three months ago the City Surveyor took action against a builder of eight houses in St. Andrew's Road, in which a mixture of very little lime with a great deal of dirt consisting of surface sweepings, and containing coal dust, brick dust, fine wood shavings, road detritus, and other miscellaneous rubbish was made to do duty for mortar. The case was the subject of a prosecution, and the builder was ordered to pay a fine of £5 and costs. The building is still unfinished, so that the object of preventing their habitation has been so far attained, although the houses have not been taken down.

Sewers at  
Edgbaston.

Many complaints have been received recently, particularly from residents in Edgbaston, of nuisances caused by the escape of sewer gas from the street gullies. The question is always a difficult one to deal with on account of its complex nature. It has been referred to the City Surveyor and myself, and Mr. Till is having an extensive series of observations made with a view to suggesting a means of prevention; these observations and the experiments to which they will lead will necessarily occupy a considerable time, but when completed no time will be lost in submitting to you a report upon the subject.

Bad Drainage  
at Edgbaston.

Having received repeated complaints of ill-health and nuisance being occasioned at 11, Edgbaston Road, by the faulty condition of the drainage, I made an inspection of the premises, assisted by the Inspector of Nuisances and the Drain Inspector.

Many faulty points were discovered, viz., a bell trap in a pantry, and offensive odours in a china pantry: the soil pipe in direct connection with the drain behind it, and no ground level opening for ventilation of the soil pipe. It appeared likely that there existed no trap between the premises as a whole and the street sewer. As the agent stoutly maintained that everything was in proper order and positively refused to do anything in pursuance of the notice served upon him, I obtained your sanction to the opening up of the ground to ascertain whether the premises were disconnected and properly arranged or not.

On this being done it was found, as anticipated, that there was no interception trap on the main drain. It was, more-



over, found that the disagreeable odours which had been so long perceived in the china pantry arose from a defective disconnection of a former sink drain, which had been inefficiently covered up with mortar and was in direct communication with the base of the soil pipes. The bell trap in the scullery was found to be defective, permitting the entrance of sewer gas into the room. The overflow from the closet cistern was also in direct connection with the soil pipe, which latter was therefore discharging its surplus air in the closet and house, and finally the overflow pipe from the soft water cistern was not disconnected from the drain.

The demonstration of these glaring defects could no longer be resisted even by the agent, who subsequently had the necessary improvements made. Since then no complaints of either illness or nuisance have been heard of.

The Chief Constable having been prostrated with a serious illness, which ultimately proved to be Diphtheria, I visited and inspected his house, which has since been more fully examined by the Inspector of Nuisances and the Drain Inspector. There were several defects of construction and arrangement, especially the disposition of one of the soil and ventilating pipes, an old drain under the floor of the house which had burst into the cellar the year before, and the situation of the ashtub. Chief Constable's House.

All the defects above enumerated were removed, and there is reason to believe that the house is now in a satisfactory sanitary condition. This conclusion at least is corroborated by the recovery of Mr. Farndale without any relapse, or the occurrence of any other case in the house since.

The Assistant Inspector supplied me with the following particulars of a case which is interesting in more points than one. Non-notification of Scarlet Fever.

Mrs. Mahoney's child, aged four years, 110, Coventry Street, died of Scarlet Fever on Wednesday, March 6th. A medical man was called in and attended the case for a short time; afterwards on Sunday, March 3rd, another medical man was consulted and eventually gave the death certificate. This case was not reported to me by either of the surgeons. The death was not registered until Monday, March 11th, and was returned to me only on the 18th, by the Registrar.

Part of the house was used as a second-hand clothes shop. All the goods were taken away and disinfected and the house fumigated, immediately on the case coming to my knowledge. Information of the case was kindly furnished on Friday, 15th inst., by a neighbour.

This case shows how little reliance is to be placed on voluntary notification of disease, and the risk there was of infection being spread broadcast through the sale of the second-hand clothes forming the stock-in-trade.



The following is a copy of a report made by me upon the Sanitary arrangements of the General Hospital :—

“ Council House, Birmingham,

“ June 5th, 1889.

“ *To the House Committee of the General Hospital.*

“ MR. CHAIRMAN AND GENTLEMEN,

“ In compliance with a request from Mr. Alderman G. B. Lloyd, who was then Chairman of the House Committee, I accompanied him to the General Hospital on the 28th February, and made a partial and cursory examination of the Sanitary arrangements.

“ The object was to ascertain whether, as a result of my inspection and Report made two years before, and the alterations and improvements since effected, the Sanitary condition of the Hospital was then satisfactory.

“ On the 8th of March Mr. Lloyd wrote to me saying that he was authorised by his colleagues to request me to make another inspection and Report; accordingly, assisted by the Steward of the Hospital, the Plumber, and Mr. Parker, Inspector of Nuisances, I made on three occasions a pretty complete examination of the Sanitary appliances of the institution and now send you my Report thereon.

“ In order to facilitate identification of the points referred to, I have given the numbers marked on the Hospital Drainage Plan, kindly lent me by Dr. Coghill, the House Governor.

“ Commencing with the ground level outside, I first visited the block containing the wash-house, laundry and post-mortem examination room; I was unable to discover whether the drain from the last is disconnected or not [112]. This doubt should be set at rest by a proper examination.

“ The trapping of manhole [87] is doubtful, and if trapped, it is probably on a defective principle (a mason's trap). I recommend that it be trapped by means of a 'Keynon' floor.”

“ The trap marked [85] at the bottom of a flight of steps leading to the heating apparatus is too small, inefficient in action, and faulty in principle. It was blocked at the time of my visit and did not act well even after three buckets full of water had been with difficulty passed through it. It should be replaced by a 'gully' trap. A so called 'extraction' pipe is carried from this drain between dormitories numbered 22 and 29, but as it is unprovided with an inlet it is useless for extraction, or what is the same thing, ventilation of the drain.

“ On the kitchen floor a grating [51] communicating with a drain exists. This opening should be abolished. Report on  
General  
Hospital  
(continued).

“ The drains at [45 and 47] should be provided with ventilating pipes not less than four inches in diameter, rising to the roof.

“ The manhole in Lower Loveday Street [178] is doubtful in construction ; it should be carefully examined and if found imperfect in principle it should be modified to the ‘ Keynon ’ arrangement.

“ The trap [76] is upon a drain which enters another drain on the sewer side of the trap [73].

“ The trap and manhole [73], a very important point in the drain system, would be advantageously removed to a point close to Loveday Street, and its floor should be constructed on the ‘ Keynon ’ principle.

“ The extraction or ventilation pipes of the Fever Block are arranged on the proper principle, but are unnecessarily tortuous and lengthy.

“ The drain pipes [156 and 157, 160 and 161, also 29 and 56] are fitted with ventilation pipes which are so small as to be nearly useless.

“ In the Scullery the drain-trap [53] under the sink is defective in its setting ; it ought not to be situated where it is, but should be removed to the outside. The drain is connected with two water-closets, which should be cut off in the usual manner.

“ Drain-trap [50] at the bottom of the steps leading from the front of the building to the kitchen is defective.

“ In the Boiler-house there are two defective D-traps [31 and 32] ; these should be replaced by gully-traps.

“ Another defective D-trap exists in the passage leading to the Boiler-house at the point numbered [28].

“ In a trench for hot water pipes near [28] rubbish has accumulated which should be removed, and the trench kept clean in future.

“ There are defective traps at points [6 and 19] near the Lodge.

“ By the side of the flushing tank in timber yard, I perceived sewer gas escaping from a hole which appears to have been made by rats. This shows a defective drain and should receive immediate attention.

“ A Bath-room for the use of the Officers, recently constructed near the Larder, has a trap on the floor ; this should be transferred to the outside, where it will probably be necessary to place it in a small ‘ area.’

“ *Milk Store or Pantry adjoining Larder.*—The sink is provided with a syphon trap only ; it should be cut off from direct communication with the drain. It also contains a gas meter which, bearing in mind the readiness with which milk absorbs odorous substances, is not desirable if it can be avoided.

“ *The Meat Store* is imperfectly ventilated. The ventilation would be improved by a wide tube about 30 feet long carried along the ceiling of the dry store to the front of the building.

“The ventilation of the Larder is not satisfactory, having only one opening into the external air, the other being into the corridor.

“ *The Kitchen Lavatory* basin is not trapped, and is in direct communication with the drain ; it should be severed.

“In the annexe to the Scullery the windows should be kept open, and they should have been placed opposite each other.

“ *Servants' Dining Hall.*—Here the ventilation is not satisfactory. It is not impossible to obtain through ventilation by pipes running through the roof of the kitchen.

“ *The Nurses' Dining Room* has one or two windows on the west side which do not admit of being opened. This defect should be removed.

“In the angle marked [64] there is no trap, and, though the drain is disconnected further on, it is highly desirable to have a trap at this point.

“ *Out-Patients' Casualty Room* or Surgeons' Consulting Room, at the Summer Lane and Loveday Street corner.—The closet at this corner has windows on three sides, and is therefore well ventilated when the windows are kept open.

“There are two soil pipes traversing it which I understand are not ventilated at all [175 and 176]. Their situation is objectionable ; but if they must remain inside, they should be fully exposed to view so that, on any leakage occurring, it may be the more easily detected, and they should be both efficiently ventilated by openings both on the ground level and high in the air.

“The lavatory basins [173] in this room are said to still discharge into the soil pipes, but they are protected by good ‘syphon-bends.’ It would be much better, however, to disconnect these basins by an air-break, if possible.

“There is another closet in the Summer Lane or west corner of the same room, the soil-pipe of which is not ventilated. Its ventilation, like those above referred to, should be effected without delay. Both closets open directly into the room.



“The pipe from the flushing tank [168], instead of passing under the floor of the surgeons’ retiring room, should be situate outside the wall of the building. I do not know whether it is possible to effect this alteration.

Report on  
General  
Hospital  
(continued).

“*Post-mortem Room.*—This has a deep branched gutter covered with an iron grating, and discharging apparently underground directly into an external drain. This gutter is not accessible, as it should be, in its whole length; its mode of connection with the drain system is doubtful, it is too deep, and has the great disadvantage of permitting the lodgment of solid animal and other matters. I recommend that there be only a single straight gutter, quite shallow, that it be uncovered and open to its termination, that it be disconnected from the drain, and that the floor be asphalted and made to incline in two directions only to the gutter in question.

“At present there is considerable nuisance caused by retention and decomposition of animal tissue, requiring a free use of carbolic acid to render it tolerable. With the arrangements I have suggested nuisance would be entirely prevented, and the use of carbolic acid rendered quite or nearly unnecessary.

“The position of the drying-room is somewhat objectionable, as the heat from it must have the effect of favouring decomposition in the post-mortem room above, but perhaps this can be obviated.

“*Nurses’ House.*—The pipe from the sink in the bath-room appears to be still in direct communication with the drain. It should be arranged exactly on the principle of the soil-pipe of a water-closet.

“The trap behind the Burn Ward [144] appears to supply air to the ventilating pipe instead of the latter drawing air from the drain for its ventilation; a properly arranged ‘gully’ trap should be substituted here.

“The soil-pipe at the back of the drying-room [111] is ventilated by a pipe which is too narrow and circuitous, and opens under the eaves. It should be straight and carried higher. The pit [110] receiving rain water is foul, so that its exit-pipe cannot be seen; a simple ‘gully’ trap would be far preferable to the pit, and one should be substituted for it [122].

“At [87] is a large man-hole furnished with a builder’s trap. I advise the introduction of a ‘Keynon’ floor in its place.

“The trap at [81] appears also to be a builder’s trap; I recommend a similar change here.

“The closets to the Physicians’ waiting-room [156 and 157] have an imperfect ventilating arrangement by



which the sewer instead of the soil-pipe appears to be ventilated. This should be definitely ascertained, and if necessary corrected.

“ Soil-pipe [71] is supplied with only a  $1\frac{1}{2}$  inch pipe for ventilation; it should be of the same diameter as the soil-pipe itself. It has moreover three bends which must nearly destroy what little utility as a ventilator the present narrow pipe possesses.

“ In the Officer's closet, at the top of the stairs leading to the Dispensary, the soil pipe has no ventilation pipe whatever. It should be provided with one having a ground level opening at the back, and an upper opening at the front.

“ *Men's Ward, No. 1.*—More complete separation of ward and closet are desirable.

“ *Men's Ward, No. 2.*—The same remark applies to this ward.

“ *Men's Ward, No. 3.*—The closet is not properly cut off from the ward.

“ *Ward 11.*—Lavatory and water-closet. An old soil-pipe from a watercloset above, but which is now disused, traverses the closet. It should be removed, as it is useless and might prove dangerous. The proper soil-pipe of the closet appears to be leaky at a point outside the building near the watercloset windows.

“ *Ward 10.*—The drainage arrangements in connection with this are contained in one of the new *annexes*, and include water-closet, bath, lavatory, and slop sink. This slop sink, which conveys away urine and foul liquids from the ward is properly arranged for discharge like a soil-pipe, except that I could discover no ground opening, which is indispensable for ventilation. The sink in question is one of a vertical series, an arrangement very good in itself provided it is properly carried out, but such a disposition without due regard to the strict observance of mechanical details may be attended with the disadvantage of one sink being untrapped by syphoning during the action of the others. I therefore tested the sink of this ward and found that this faulty action obtains. The proper water seal of the trap was  $3\frac{1}{4}$  inches deep; by the action during use of the other sinks the column of water was diminished to 2 inches, showing that  $1\frac{1}{4}$  inches of the column were removed by syphonage (or suction), by which the seal was destroyed and the room put into direct communication with the drain.

“ *Ward 8.*—Scullery and bath-room; the pipes discharge their water directly into the drain, and should be severed. The watercloset is separated from the ward by cross ventilation.

" *Ward 7.*—The sink discharges directly into the soil-pipe, which is an exceedingly bad arrangement. The watercloset and sink are separated from the ward by only one door, but there is cross ventilation. Report on  
General  
Hospital  
(continued).

"The washing-up closet waste pipe discharges into a spout-head, which is too close to the windows. The spout-head may convey drain air into the ward ; disconnection should be made at the ground level. The same remark applies to Ward 21.

" *Ward 6.*—The washing-up closet is similar in arrangement to that of Ward 7.

"The Matron's closet is not so perfect in arrangement as could be desired, but on the suggestions made it has been greatly improved since my first visit, and is now in a sanitary condition.

"It cannot be too strongly insisted upon that all soil-pipes should properly be placed outside the building.

"Whenever a closet opens directly into a ward it should, if practicable, be altered so as to be cut off by a cross-ventilated lobby, however short, and therefore separated from the ward by two doors, viz., one belonging to the closet, the other to the ward ; if not considered practicable, free cross ventilation of the closet itself should be secured by open windows or other means.

"The new *annexes* meet all these requirements, and represent the system which should always be adopted where possible.

"In addition to the modifications I have suggested in the various trapping arrangements, I would emphatically point out the importance of a systematic and frequent inspection, flushing, and cleansing of them. Many of the traps at the time of my visit were in a very filthy and offensive state, whereas they ought to be perfectly clean and free from all accumulations of solid matter. It should be the duty of some one specially deputed to the task to make the round of the surface-traps periodically, and he should be required to do this on a certain day of the week, or oftener if necessary.

"It is gratifying to find that the various changes carried out since my previous Report are great improvements and generally satisfactory, also that the existing defects are, with few exceptions, of a minor character admitting of correction without serious outlay.

"I remain,

"Mr. Chairman and Gentlemen,

"Yours faithfully,

"ALFRED HILL, M.D.,  
"Medical Officer of Health."

Causes, origin,  
and distribution  
of Disease.

ii. *The causes, origin, and distribution of disease.*—

The presence of Scarlet Fever in the town in an epidemic form has greatly added to the amount of work done in investigating and preventing the spread of disease. All cases of Scarlet Fever are removed, if willing and in a fit condition, to the City Hospital; enquiries as to the origin of the case and its relation to other cases in the neighbourhood are made, infected houses are purified, and the clothing used by patients is disinfected at the Bacchus Road station. In addition to this all cases of other Zymotic diseases coming to the knowledge of the Department are enquired into, the homes of the patients are thoroughly examined with a view to discovering and remedying any sanitary defects, and efforts are made to find out the probable cause of the illness.

Schools and  
Trades and  
Infectious  
Disease.

In cases of school children being found in houses where infectious disease exists, the heads of the schools they attend are notified that attendance must cease till all danger of infection is passed. In a few cases it has been found necessary to inform employers of the presence in the homes of their workpeople of cases of an infectious nature, while such trades as milk-selling, tailoring, pawnbroking, laundry work, and mangling are stopped for a time if such cases occur on the premises in which they are being carried on.

iii. *Advice to the Sanitary Authority on matters affecting injuriously the Public Health.*—

Advice to the  
Sanitary  
Authority.

I have from time to time advised your Committee upon a number of matters affecting public health, including the closing of uninhabitable houses, the improvement of the sanitary condition of dwellings, the establishment and conduct of offensive trades, the existence of Zymotic disease in particular localities, and upon other subjects of a similar kind.

Compulsory  
Notification  
of Infectious  
Disease.

At your meeting of the 9th July, when the Infectious Disease (Notification) Bill was laid before you, a feeling was expressed that there were several objections against the passing of such a Bill, and I was requested to make a Report on the subject, which I did at your next meeting in the following words:—

“Notification of disease to be of real value must not be subordinate to individual interests or caprice, because under such conditions it is then too uncertain and frequently too late to be of value.

“Medical men in Birmingham not unfrequently report cases of disease after the death of the patient. Efficient notification by voluntary means is clearly a failure, and there is nothing left but to obtain compulsory powers.

“Compulsory notification is now in force in 56 urban sanitary districts in England and Scotland.



"Among the objections that have been raised, one is that compulsory notification of disease by the medical man leads to the concealment of cases. The experience of the sanitary authorities of Bradford, Macclesfield, Oldham, and Dundee refutes this assertion.

Compulsory  
Notification  
of Infectious  
Disease  
(continued)

"It has also been alleged that compulsory powers promote antagonism between the medical practitioner and the Medical Officer of Health. The testimony of the authorities of such places as Leicester, Bradford, Oldham, and Llandudno shows this not to be the case.

"The allegation that the Medical Officer of Health's action may prove to be inquisitorial, that he may use the opportunity to annoy and injure the medical practitioner is both absurd and opposed to experience, while the contention that notification by medical men would be a betrayal of the necessary confidence between doctor and patient could have no possible justification if both the householder and medical attendant were obliged to notify; hence the advantages of the dual system, as recommended in the Bill now before the House of Commons.

"The reasons why the medical man should notify appear to be unanswerable, because he only is qualified to diagnose the disease, and he alone would be able in the majority of instances to satisfactorily furnish the necessary particulars to the sanitary authority, and thus save much unnecessary delay. In only one town, Greenock, has notification by the householder alone been tried, and here the results have been very unsatisfactory, as nearly 50 per cent. of the cases were not notified to the sanitary authority; notification on the dual system has since been adopted there.

"The objection that notification would be injurious to tradesmen is purely theoretical, and is in direct opposition to experience. It is on the contrary a great advantage. In several instances I have had *employés* in large establishments removed to the Hospital to the great relief and protection of the other inmates, while the proprietors have been grateful for the assistance rendered. But even should the business suffer in consequence, surely this is a smaller evil than that of allowing a disease to be spread broadcast, as might easily happen in the case of milk shops, schools, and the like.

"The absence of complete notification has an important bearing upon the extent and cost of Hospital accommodation, for if every case of disease were reported as soon as diagnosed the outbreak would be nipped in the bud and a comparatively small Hospital would suffice; but under the present system the stamping out process fails, the disease becomes epidemic, and then even a large Hospital will not at all times provide sufficient accommodation for the whole of the cases willing to be removed there."



Diphtheria at  
Jenkins Street  
Board School.

iv. *Outbreaks of Infectious, Contagious, or Epidemic Diseases.*—A number of cases of Diphtheria occurred about midsummer almost simultaneously in certain streets at Small Heath, in the neighbourhood of Jenkins Street Board School, which nearly all the children attended. I carefully investigated these cases, and though I found the sanitary condition of the children's homes by no means above suspicion, I could not disregard the coincidence of these children being pupils at the same school. I therefore inspected and enquired into the drainage and other arrangements of the school, which also presented many sanitary shortcomings. These I represented to the School Board, who at once gave the subject attention, and apparently with good results, for no other cases in the same connection have since come to my knowledge.

Typhoid Fever  
in St. Vincent  
Street.

A number of Typhoid Fever and allied cases occurred at the end of the year in a court at the back of 141 and 143, St. Vincent Street. The court is roomy, and well paved with blue brick, and the tenants are respectable people, who keep the surface fairly clean. The disease attacked both mothers and children; but in no case were the fathers affected, probably owing to the circumstance that they are engaged away from home. It is most unusual to find such a large group of cases as this in one court, and it was most desirable to find out its cause, which was no doubt a removable one. Complaints have been made of a nuisance produced by sewer gas escaping from the street gullies, and two cases of Typhoid had previously occurred in front houses in the street some distance away; but I did not attribute the cases in the court to the sewer gas in the street. They could not be considered as due to the water supply, as that is Corporation water, and is common to the whole locality. An enquiry into the milk supply of the court gave no explanation, and though there was a trap near the entry—the only one—whose setting had been defective, this was so far from the house where the first cases occurred that I considered comparatively little importance was to be attached to it. The only remaining factor likely to account for the outbreak was the mode of disposal of excrement, the principal medium through which, directly or indirectly, Typhoid is produced and propagated. The pan system was the one in use in this court, and I was informed by the tenants and others that the contents of the pans were frequently shed about the yard by the pan men while manipulating them. I need hardly say that such a dispersion of infected material over a large surface of yard, and into the trap and drain, is excessively dangerous, and commends itself to my mind as the cause of the large majority of the cases—if not the whole of them. I accordingly recommended your Committee to substitute waterclosets for the pans.

Typhoid Fever  
in Aston Street.

A case of Typhoid occurred at a property in Aston Street, where a closet existed of peculiar construction, the only flushing provided being a rain water spout, so that for weeks possibly

the closet went unflushed. Some improvement has been effected in it on my representation, but I still regard it as unsatisfactory.

In the first six weeks of the year I was struck with the large number of Scarlet Fever cases received into the City Hospital from the Children's Hospital. The actual number was sixteen, or one-fifth of the number of admissions during the same period from the whole of the town. This appeared the more remarkable, inasmuch as the Children's Hospital had closed its Scarlet Fever Wards, and received no Scarlet Fever cases for nearly a year. I accordingly communicated, on the 16th February, with the Honorary Secretary, suggesting the existence of some source of infection admitting of removal, and was subsequently invited to and attended a conference of the Medical Board and House Committee. I then made a number of suggestions, the principal of which referred to an improvement of the arrangement for visitors, who, it was very likely, brought in the infection from the outside, more particularly as the waiting-room was most unsuitably situated in the centre of the building among the sick wards, and to the desirability of thoroughly overhauling the drainage of the building, which, on my advice, had, as far as the exterior premises were concerned, been some time previously put into good order.

Scarlet Fever  
at Children's  
Hospital.

On consideration it was decided to close the Infectious Wards of the institution for some weeks, during which time one floor at least was taken up to examine any drains that might exist. Drains were found under the flooring, and these proved to be in a faulty condition, resulting in the escape not only of sewer gases but also of liquids.

These defects were, of course, expeditiously remedied, and I have heard since of no similar outbreaks of zymotic disease in the institution.

v. *Examination of, and action in regard to, Suspected, Diseased, or Unwholesome Food.*—Over 30 tons of meat unfit for human food were destroyed during 1889. This amount comprised 411 lots voluntarily given up by the owners, and 12 lots seized by the Inspectors. In addition to this, 49 lots of bad fish were seized and 149 lots were voluntarily given up, the total weight destroyed being 48 tons 9 cwt.

Unwholesome  
Food.

More than 3 tons of fruit were also found to be unfit for consumption, and destroyed.

Two vendors were prosecuted for exposing bad meat and fish for sale. In each case a fine of £5 and costs was inflicted.

vi. *Duties under Sanitary Bye-Laws and Regulations.*—These comprise such as relate to Common Lodging Houses, Houses let in Lodgings, Slaughterhouses, Dairies, Cow Sheds, and Places for the Storage and Sale of Milk.



## COMMON LODGING HOUSES.

Common  
Lodging  
Houses.

The number of Common Lodging Houses has again fallen, being now 91, against 97 at the end of 1888. They are registered to accommodate 2,034 lodgers and have been kept under constant inspection during the year, 12,346 visits by day and 2,679 night visits having been paid to them. Three lodging house keepers have been summoned—one for allowing persons of both sexes to use the same room, and two for not having their houses registered.

## HOUSES LET IN LODGINGS.

Houses Let in  
Lodgings.

The number of these is also somewhat lower than in the previous year, and much lower than it was a few years ago. There were 132 such houses at the close of the year, the number of lodgers allowed in them being 748.

## SLAUGHTERHOUSES.

Slaughter-  
houses.

At the end of the year the number of Slaughterhouses in the City was 256, 10 less than at the close of 1888; 126 of them were licensed and 130 registered.

At the request of the Markets and Fairs Committee I visited and inspected a newly-erected Slaughterhouse in Rupert Street, and reported that its construction was satisfactory.

The reduction in the number of private Slaughterhouses which has taken place, and which is very desirable, and the necessity for adequate and proper accommodation for slaughtering, which must now be greater than ever, point to the need of a Public Abattoir in the town. I sincerely hope the provision of so important an establishment will not long be delayed.

Abattoir.

## DAIRIES, MILK SHOPS, AND COW SHEDS.

Dairies and  
Milk Shops.

The Assistant Inspector charged with the visitation of these reports that he has made during the year 3,004 inspections of Dairies and Milk Shops, of which there are upon the register 1,611, against 1,640 last year. Their condition is much the same as when last reported; but they might be very much improved if there existed a Code of Bye-Laws for their regulation.

Notice was served to limewash 53 shops and to cleanse 17, and to limewash 73 cellars and 54 pantries. Where articles were kept in the Milk Shops which were calculated to taint the milk their sale in such shops was stopped. Such articles are—Petrolene, Fish, Vinegar, Pickles, and Tripe. Prohibitions of the sale of Petrolene were made in 12 cases, of Tripe in 2, of Fish in 12, and of Vinegar and Pickles in 120. Milk vessels were found dirty in only 12 instances.

During the year 235 applications for permission to sell Milk were received, 105 of which were granted, 130 being



refused on the ground that the premises were unsuited to the healthy storage of the Milk. Five persons were registered as Purveyors of Milk having no retail shop, while one person was registered as a Dairyman.

Twelve cases of Infectious Disease were notified to me during the year, viz. :—One of Diphtheria, two of Typhoid, and nine of Scarlet Fever. In every case the sale of milk, with or without its destruction as seemed necessary, was stopped. The Scarlet Fever cases were removed to the City Hospital, and the resumption of sale not permitted until after complete purification and disinfection of the premises.

The Cow Sheds are 75 in number, the same as in 1888 ; Cow Sheds. and the number of visits to Cow Sheds during the year is 1675. Many of these Sheds and their management require improvement, but little can be effected until Bye-Laws, definitely setting forth the conditions to be observed and investing the Inspectors with powers of prompt action, have been put into force.

No case of Pleuro-Pneumonia was discovered during the Pleuro-pneumonia. year.

#### CANAL BOATS ACTS, 1877 AND 1884.

The inspection of Canal Boats has been effectively carried Canal Boats Acts. out during the year, 765 inspections having been made. Fifteen boats have been improved by the addition of fore-cabins, and one was provided with partitions for the separation of the sexes. Overcrowding has been found and remedied in eight instances, while in ten cases females over 12 years old were found occupying the same cabins as males. In three boats the cabins were dilapidated, and had to be repaired, and one other is under notice for similar improvement. No case of Infectious Disease was discovered by the Assistant Inspector, who never met with any opposition in carrying out his duties. The number of boats now registered under your Authority is 352, 99 having been struck off during the year, and only 34 added.

Legal proceedings were taken in two cases—in one for overcrowding a cabin, and in the other for allowing a girl over 12 years of age on board. In each case a fine of 10s. and costs was inflicted.

#### BAKEHOUSES.

There are at present 507 of these, against 504 last year. Bakehouses. The Inspector has made 919 visits to them during the year. 110 were found to be dirty, and these were ordered to be lime-washed ; 8 had dirty floors ; and 1 only contained a drain trap, which has been removed.

In fourteen of the Bakehouses animals were found—in nine of them dogs were kept, in three rabbits, in one fowls, and in one pigeons. The ventilation was improved in three

Bakehouses  
(continued).

instances. In thirty of the Bakehouses youths under 18 years of age were employed. I forwarded intimations of these to H.M. Inspectors of Factories, as they come under the operation of the Factories and Workshops Act.

The general condition of the Bakehouses is fair; some are very good, being clean, well ventilated, well lighted, and roomy; but a great many are the reverse, and as many as 40 are situated below the ground-level.

Two applications were made to your Committee for permission to construct subterraneous ovens, and plans were submitted. One of the applications was not granted.

A plan of baking ovens proposed to be erected in Shadwell Street was submitted to me by the Surveyor of Buildings (Mr. Lloyd). It was proposed to construct them for about two-thirds of their length underneath the footpath in Little Shadwell Street. As I considered there was danger of contamination by drainage, sewage, gas leakage, and the like, I recommended that the plan be not passed.

The other plan was for a Bakehouse in Dale End, and was at first disapproved of; it was then withdrawn, and a new one was submitted which proved satisfactory.

Offensive  
Trades.

vii. *Offensive Trades.*—The number of establishments where these are carried on has undergone no increase for several years. Two applications were made to your Committee for permission to establish gut-cleaning businesses—one in Smithfield Passage, in May last, and the other at 81, Bagot Street, in October, which however were refused.

The discovery of the existence of one of these gut-cleaning establishments was made in rather a peculiar manner. The Inspector, while making observations upon the drainage into Hockley Brook, found at least a cart-load of decomposing portions of intestines lying at the bottom of the brook. Further investigation showed that this offensive material had been discharged from works in Long Acre, where a business had been established and carried on for a considerable time without the knowledge or consent of your Committee. The effect upon the sewers of decomposing animal filth of this kind can be readily conceived, and illustrates the undesirability from a sanitary point of view of permitting the multiplication of such establishments. In this case notice was at once served to discontinue the manufacture, but the penalties which might have been inflicted for carrying on an offensive trade without a license were not sued for.

Fortnightly  
Reports of  
Medical Officer  
of Health.

viii. *Fortnightly Reports of the Medical Officer of Health to the Health Committee.*—I have reported to your Committee, at each of its meetings, on various subjects, including the following :

1. The general health of the City, including the total death-rate, Zymotic death-rate, and average age at death.
2. The occurrence of Infectious disease, and the results of the investigations of certain of the most dangerous cases.
3. The Waters supplied from shallow wells and by the Corporation.
4. Articles of Food, Drink, and Drugs obtained for analysis.
5. Diseased and unwholesome Food.
6. Reports on special questions in pursuance of resolutions, instructions, and otherwise.

Fortnightly  
Reports of  
Medical Officer  
of Health  
(continued).

#### CITY HOSPITAL.

From a report of Mr. Manning (the Medical Superintendent) City Hospital.  
I find that during the year ended December 31st, 1889, the number of patients under treatment in the Hospital amounted to 1837. Of these 17 were members of the staff who contracted the disease in the performance of their duty.

On the first day of the year there were 99 patients. This number slowly increased till on the 1st of June it amounted to 126, after which time its increase became much more rapid, till it reached its maximum on the 14th of November, when it was 485, of whom four were members of the staff.

The total number of beds was 385.

During the months of October and November no fewer than 626 patients were admitted, and the highest number of weekly admissions was in the week ending October 19th, when they amounted to 126.

Between the 1st of June and the 1st of November the Convalescent Home and five wards at Western Road were started and provided with furniture and everything necessary including an entire staff for each. Five new wards also were constructed and opened on the Lodge Road side, while in November the Convalescent Home was enlarged, to meet the growing demand, by the addition of two wards containing 40 beds.

All the wards were filled immediately they were furnished, and Mr. Manning says :—" I am glad to say the admission of a patient was never delayed one day owing to any administrative hitch."

In the early part of the epidemic the mortality was very low—under 5 per cent. of the cases—but during the last four months the disease assumed a much more severe type, causing the mortality for the whole year to rise to 6.1 per cent., which however is a comparatively low figure.

Owing to the rapid increase of patients, and the enormously increased amount of work both professional and administrative



City Hospital  
(continued).

involved, it was found necessary to obtain further professional assistance, and accordingly, in July, Dr. T Eustace Hill was engaged. In a little more than two months he unfortunately took Diphtheria, followed by Scarlet Fever, both of an exceptionally severe type, and, after a long and extremely critical illness, is only just now recovering his habitual health. During Dr. Eustace Hill's illness Dr. Joynt was appointed, and has continued to act as Mr. Manning's colleague.

In my remarks upon Scarlet Fever I have shown how rapidly the City Hospital has risen into general public favour and how beneficial has been its operation on the public health, retarding the development of the epidemic, mitigating its intensity, ministering to the comfort and well-being of many who otherwise would be most inadequately tended, and, finally, diminishing the mortality of the disease.

Such an extensive use of the Hospital has never been approached before, and the probability is that in future it will become more rather than less. This points clearly to the necessity of taking steps for the provision of a still further number of beds and more complete and substantial buildings than was possible under the strain of the present epidemic, for nothing can be plainer than the teachings of experience, that in order properly to deal with an epidemic everything requisite must be ready for dealing with it at its commencement.

Mr Manning makes a suggestion in his report which I have no doubt you will see carried into effect without delay now that it has become possible. It is the provision of separate "observation" wards, for the reception of cases about the nature of which there is doubt, or which may have been incorrectly diagnosed and about which there is no doubt, and which cannot without danger be admitted into the sick wards.

It is very gratifying to find that the public have so quickly come to appreciate the advantages of the Hospital, and I have great pleasure in stating that the treatment and care of the patients have been so well carried out that in no single case has there been any complaint of inefficiency, unkindness, or neglect; but, on the other hand, many, when the time arrived for their discharge, left the institution with genuine regret.

Cases admitted  
each year.

The numbers of cases both of Scarlatina and Smallpox admitted to the Hospital in each quarter since the opening of the first wards are as follows :—

DATE.			Smallpox.		Scarlatina.		Total Cases
1874.							
4th Quarter	...	...	194	...	—	...	194
(2nd Nov. to the end of the year)							
1875.							
1st Quarter	...	...	186	...	—	...	186
2nd "	...	...	169	...	—	...	169
3rd "	...	...	53	...	13	...	66
4th "	...	...	12	...	7	...	19
Totals	...	...	420	...	20	...	440

DATE.				Smallpox.	Scarletina.	Total Cases.	City Hospital, Cases admitted each year (continued).
1876.							
1st Quarter	...	...	...	2	1	3	
2nd "	...	...	...	2	4	6	
3rd "	...	...	...	2	5	7	
4th "	...	...	...	5	28	33	
Totals	...	...	...	11	38	49	
1877.							
1st Quarter	...	...	...	4	20	24	
2nd "	...	...	...	19	7	26	
3rd "	...	...	...	15	13	28	
4th "	...	...	...	0	3	3	
Totals	...	...	...	38	43	81	
1878.							
1st Quarter	...	...	...	3	13	16	
2nd "	...	...	...	4	34	38	
3rd "	...	...	...	6	139	145	
4th "	...	...	...	7	238	245	
Totals	...	...	...	20	424	444	
1879.							
1st Quarter	...	...	...	1	60	61	
2nd "	...	...	...	0	37	37	
3rd "	...	...	...	3	40	43	
4th "	...	...	...	0	47	47	
Totals	...	...	...	4	184	188	
1880.							
1st Quarter	...	...	...	2	45	47	
2nd "	...	...	...	3	27	30	
3rd "	...	...	...	8	36	44	
4th "	...	...	...	3	62	65	
Totals	...	...	...	16	170	186	
1881.							
1st Quarter	...	...	...	8	36	44	
2nd "	...	...	...	8	79	87	
3rd "	...	...	...	1	91	92	
4th "	...	...	...	0	127	127	
Totals	...	...	...	17	333	350	
1882.							
1st Quarter	...	...	...	0	90	90	
2nd "	...	...	...	54	120	174	
3rd "	...	...	...	38	197	235	
4th "	...	...	...	13	220	233	
Totals	...	...	...	105	627	732	

City Hospital,  
Cases admitted  
each year  
*continued*).

DATE.				Smallpox.			Scarletina.			Total Cases.
1883.										
1st Quarter	...	...	...	46	...	120	...	...	...	166
2nd "	...	...	...	160	...	157	...	...	...	317
3rd "	...	...	...	481	...	198	...	...	...	679
4th "	...	...	...	403	...	163	...	...	...	566
Totals	...	...	...	1,090	...	638	...	...	...	1,728
1884.										
1st Quarter	...	..	...	359	...	41	...	...	...	400
2nd "	...	...	...	56	...	94	...	...	...	150
3rd "	...	...	...	12	...	124	...	...	...	136
4th "	...	...	...	10	...	101	...	...	...	111
Totals	...	...	...	437	...	360	...	...	...	797
1885.										
1st Quarter	...	...	...	66	...	59	...	...	...	125
2nd "	...	...	..	4	...	37	...	...	...	41
3rd "	...	...	...	9	...	50	...	...	...	59
4th "	...	...	...	2	...	58	...	...	...	60
Totals	..	...	...	81	...	204	...	...	...	285
1886.										
1st Quarter	...	...	...	1	...	66	...	...	...	67
2nd "	...	...	...	1	...	98	...	...	...	99
3rd "	...	...	...	0	...	114	...	...	...	114
4th "	...	...	...	0	...	150	...	...	...	150
Totals	...	...	...	2	...	428	...	...	...	430
1887.										
1st Quarter	...	...	...	0	...	100	...	...	...	100
2nd "	...	...	...	1	...	93	...	...	...	94
3rd "	...	...	...	0	...	142	...	...	...	142
4th "	...	...	...	9	...	103	...	...	...	112
Totals	...	...	...	10	...	438	...	...	...	448
1888.										
1st Quarter	...	..	...	13	...	69	...	...	...	82
2nd "	...	...	...	4	...	86	...	...	...	90
3rd "	...	...	...	1	...	174	...	...	...	175
4th "	...	...	...	0	...	199	...	...	...	199
Totals	...	...	...	18	...	528	...	...	...	546
1889.										
1st Quarter	...	...	...	0	...	188	...	...	...	188
2nd "	...	...	...	0	...	274	..	...	...	274
3rd "	...	...	...	0	...	538	...	...	...	538
4th "	...	...	...	0	...	801	...	...	...	801
Totals	...	...	...	0	...	1801	...	...	...	1801



DISINFECTING STATION.

The greater prevalence of Scarlet Fever this year has naturally rendered necessary the disinfection of a much larger number of articles than in any year since the last and much more severe epidemic visitation in 1883. This is shown in the following Table :—

Disinfecting  
Station.

ARTICLES DISINFECTED.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.
Beds ... ..	452	2,165	855	259	481	517	586	1,176
Mattresses ...	517	1,109	592	197	390	311	419	207
Sheets ... ..	557	1,024	1,033	279	409	396	259	898
Blankets ... ..	556	1,833	1,749	376	442	359	357	1,122
Counterpanes ...	264	893	593	236	351	308	361	958
Pillows & Bolsters	940	3,397	2,325	603	1,017	888	1,164	2,278
Other Articles ...	4,920	24,446	5,502	2,444	2,736	2,156	4,506	4,149
Totals ... ..	8,206	34,867	12,649	4,394	5,826	4,935	7,652	10788

The working cost of the Station, irrespective of the expense of the new Disinfecting Station, is estimated as follows :—

Cost of  
Disinfecting  
Station.

	£.	s.	d.
Wages ... ..	50	14	0
Horse-keep, Shoeing, &c. ...	80	0	0
Gas for Heating and Lighting...	16	12	4
Coal ... ..	20	0	0
Water ... ..	2	0	0
Total ... ..	£169	6	4

For the disinfection of large and thick articles like Beds, Mattresses, Bolsters, Pillows, &c., a very long time is required by the ordinary stoves to ensure destruction of disease germs, for it is found that hot air only very slowly penetrates such articles, so that they occasion either much waste of valuable time or leave some uncertainty as to the completeness of the disinfection. Experience has taught that high pressure superheated steam penetrates into the interstices of articles of the thickest kind in a very rapid manner, and thus effects with great saving of time a certain destruction of infected matter. Such a machine is the Disinfecting Station of Mr. Washington Lyon, and one of these

New  
Disinfecting  
Station.

has been recently set up at the Disinfecting Station. As it does in a few minutes the work which with the old machine required hours, it has been of great service at a time when the amount of disinfection to be done has been unprecedentedly large, so large that it could not have been performed with the old stove. It is considered to be as effective at a temperature of 240 degrees Fahrenheit as the other is at 250 degrees, and as its temperature is much more under control its use is attended with less risk of seorching fabrics. It has the disadvantage of causing leather to shrink and become brittle and useless, so that shoes and slippers must not be submitted to its action.

Disinfection of  
Linen, etc.

It is only neccessary to use the disinfecting apparatus for such materials as do not admit of being washed. Linen and cotton articles are less expensively and more conveniently—probably more certainly—purified by boiling and washing in water than by any other method of applying heat, while a lower degree of heat is sufficient (212° F.), and at the same time the artieles are cleansed and purified as well as disinfected. A further advantage appertaining to this treatment is that it can be earried out without delay, and in most cases without removal, while it leaves the more complicated and expensive Disinfecting Maehine free to do its work upon woollen fabrics, feathers, hair, &c., which do not lend themselves to treatment by boiling water, a consideration of much importance at a time of stress such as occurs during an epidemic.

MORTUARIES.

Mortuaries.

From the following Table it will be seen that the number of bodies taken to the Mortuaries of the City has been considerably higher than in the previous year, though lower than in 1885, 1886, and 1887 :—

	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.
Moor Street ...	15	13	30	76	58	66	106	124	56	103
Ladywood Rd.	7	17	17	10	23	9	12	3	11	7
Kenyon Street	10	25	22	46	42	44	55	55	35	33
Duke Street ...	12	9	17	10	18	38	28	41	17	20
Moseley Street	8	8	25	26	35	37	39	43	19	11
Totals ...	52	72	111	168	176	194	240	266	138	174

## WATER SUPPLY.

As in previous years I have analysed monthly samples of Water supply. Water drawn from the Corporation mains, with the result that with the exception of a very slight increase of organic matter they proved to be of much the same character as for several years past. The analytical results are given in Table IX.

Seventy-two samples of Well Water were also submitted Well Waters. to me by the Inspector of Nuisances; their analytical results are appended, but the localities from which they were taken were not supplied to me. I have already reported upon them to your Committee.

The following Miscellaneous Articles were analysed for Miscellaneous Analyses. different departments of the Corporation, and reported on:—

15	Samples of	Sewage.
12	"	Mortar.
8	"	Poudrette.
5	"	Water.
5	"	Gypsum.
4	"	Disinfectant.
2	"	Gas Lime.
2	"	Plaster.
2	"	Lime.
1	"	Medicine.
1	"	Paint.
1	"	Concrete.
1	"	Soot.

—

Total ... 59 Samples.

## PUBLIC BATHS.

Owing no doubt to the warm summer the total number of Public Baths. bathers at the Corporation Baths was last year much higher than in 1888, though below the number for 1887. It amounted to 347,253, and of this number 328,577 were men and 18,676 women.

In 1884, when the summer was a very warm one, as many as 445,545 bathers resorted to the baths. The beneficial effect on the health of the community of adequate accommodation in this respect cannot be ignored, and I am pleased to see that it is proposed to extend the facilities for bathing which already exist in the City.



RETURN OF THE NUMBER OF BATHERS AT EACH OF THE CORPORATION BATHS DURING THE LAST  
• TEN YEARS.

Year.	KENT STREET.			WOODCOCK STREET.			NORTHWOOD STREET.			MONUMENT ROAD.			SMALL HEATH.			TOTAL.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Grand Total.
1880	108253	8468	116721	71843	2051	73894	115446	3166	118612	—	—	—	—	—	—	295542	13685	309227
1881	115260	8768	124028	64014	1762	65776	106550	2704	109254	—	—	—	—	—	—	285824	13234	299058
1882	112141	8509	120650	68272	2015	70287	113036	4049	117085	—	—	—	—	—	—	293449	14573	308022
1883	101503	8025	109528	72852	2025	74877	96115	3093	99208	88073	5245	93318	8258	282	8540	366801	18670	385471
1884	115608	8812	124420	80279	2079	82358	103421	3506	106927	101173	6917	108090	23009	741	23750	423490	22055	445545
1885	90228	8749	98977	66111	1468	67579	77687	3039	80726	77791	6016	83807	17008	247	17255	328825	19519	348344
1886	83176	9009	92185	68720	1394	70114	78429	2459	80888	76750	5677	82427	13228	173	13401	320303	18712	339015
1887	87743	8588	96331	63143	1355	64498	78136	2714	80850	83963	6032	89995	24817	141	24958	337802	18830	356632
1888	86848	7848	94696	50513	1100	51613	68066	2051	70117	71911	5646	77557	6835	24	6859	284173	16669	300842
1889	99615	8873	108488	62573	1157	63730	75437	2501	77938	78974	6075	85049	11978	70	12048	328577	18676	347253

## SEWERAGE WORKS.

The total length of Sewers under the charge of the City Council was at the close of the year 202 $\frac{3}{4}$  miles, against 201 $\frac{3}{4}$  at the end of 1888. Sewerage Works

The absence of a sewer in Galton Street became known to me on my visiting a case of Typhoid Fever at No. 22 in the street, in January. The drainage of the property was in a most defective condition, and the walls of the house in which the case occurred were damp owing to absorption of moisture from the ground, resulting from the absence of a damp-course. Some of the drains were choked, and as a consequence the drainage discharged itself to a considerable extent into the river Rea at the back of the property. Galton Street Sewer.

My report on this matter made to your Committee was referred to the Public Works Committee, and application was subsequently made to the magistrates for an order upon the owners to sewer, kerb, gutter, and pave the street. This work has since been executed, and cannot fail to exercise a very beneficial effect on the health of the inhabitants in the vicinity.

## STREETS AND ROADS.

There are now 204 $\frac{1}{2}$  miles of Streets and Roads in the City, of which at the end of the year 196 $\frac{1}{2}$  miles had been declared highways. Of the remaining 8 miles, about 2 $\frac{1}{4}$  miles consist of private roads and passages, while the rest comprises new roads not yet taken over by the Corporation. Streets and Roads.

## NIGHTSOIL AND REFUSE DISPOSAL.

The number of loads of Nightsoil removed from the ashpit-privies during 1889 was 46,995. The contents of the Pans were collected in 1,957,558 instances, and 72,978 loads of Ashes were removed. Nightsoil and Refuse disposal.

The number of privy ashpits now existing has already been given on page 41.

It is estimated that there are now between fourteen and fifteen thousand waterclosets in the City. Waterclosets.

## SANITARY WORK.

As many as 17,541 notices have been issued during the year for the Abatement of Nuisances calculated to be injurious to health, a larger number than in the previous year. No less than 1,729 houses have been cleansed after the occurrence in them of Scarlet Fever, a most important branch of work in connection with the prevention of the spread of the disease. More than 3,400 drains have been cleared from obstruction, while the escape of sewer-gas has been prevented in over 1,100 instances, either by disconnecting sink drains from the sewers Sanitary Work.

Sanitary Work  
(continued)

or trapping in an efficient manner other drains; 1,151 filthy houses have been cleansed, and thereby rendered much less liable to harbour disease; and 1,555 accumulations of filth of different kinds have been removed. I am pleased to say that 1,633 midden privies have been converted to water closets. The number of the latter in the City now largely exceeds that of the former, and this must have a good effect upon the health of the community.

Magistrates' orders were granted in 18 cases in which owners refused to abate nuisances existing on their properties. Details of the work done by the Department will be found in Table V.

I remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D.,

*Medical Officer of Health.*



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### III. APPENDIX.

(TABLES, MAP, AND CHART.)

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TABLE I.  
BIRTHS AND DEATHS (GROSS NUMBERS).

DATE.	BIRTHS.	DEATHS.
1889	14,001	8,352
1888	13,673	7,835
1887	13,893	8,536
1886	14,282	8,499
1885	14,383	8,156
1884	14,991	9,043
1883	14,701	8,714
1882	14,866	8,425
1881	14,869	7,938
1880	15,111	8,088
1879	15,846	8,650
Average of Ten years } 1879-1888 ... }	14,662	8,388

## NOTES.

- 1.—Population at Census 1881, 400,774.
- 2.—Population estimated to the middle of the Year 1889, 454,835.
- 3.—Area in Acres, 8,400.
- 4.—Number of Inhabited Houses in City at Census 1881, 78,301.
- 5.—Average number of Persons in each House at Census 1881, 5.1.

TABLE II.  
ANNUAL RATE OF MORTALITY, DEATH-RATE AMONG CHILDREN, AND DEATHS IN PUBLIC INSTITUTIONS.

DATE.	Annual rate of Mortality per 1,000 Living.	Deaths of Children under 1 year; percentage to total Deaths.	Percentage of Deaths of Children under 1 year to Registered Births.	Deaths of Children under 5 years; percentage to total Deaths.	Percentage of Deaths in Public Institutions to total Deaths.
1889	18.4	28.7	17.1	45.4	15.7
1888	17.5	26.9	15.4	43.4	15.0
1887	19.4	28.9	17.8	44.8	14.5
1886	19.6	29.6	17.6	46.5	14.5
1885	19.1	27.6	15.7	41.8	15.7
1884	21.1	28.9	17.4	47.7	13.8
1883	21.0	26.8	15.9	43.8	15.7
1882	20.6	29.1	16.5	47.2	15.4
1881	19.7	27.7	15.0	47.1	15.3
1880	20.5	32.1	17.2	49.9	12.4
1879	21.8	27.5	15.0	49.7	14.1
Average of 10 years 1879-1888	20.0	28.5	16.3	46.2	14.6



TABLE III.

Mortality from certain classes of Diseases, and proportion to population and to 1,000 deaths in 1889.

CLASS OF DISEASES.	Total Deaths.	Death Rate per 1,000 of the population.	Proportion of Deaths to 1,000 Deaths.
1—Seven principal Zymotic Diseases	1,191	2·6	143
2—Pulmonary (other than Phthisis)	1,585	3·5	190
3—Tubercular           ...       ...       ...	840	1·8	101
4—Wasting Diseases of Infants   ...	735	1·6	88
5—Convulsive Diseases of Infants...	410	0·9	49

1.—Includes Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever, and Diarrhoea.

3.—Includes Phthisis, Scrofula, Rickets, and Tabes.

4.—Includes Marasmus, Atrophy, Debility, and Premature Birth.

5.—Includes Hydrocephalus, Infantile Meningitis, Convulsions, and Teething.

TABLE IV.

SHOWING THE NUMBER OF DEATHS IN THE TEN YEARS, 1879 TO 1888, FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES, AND THE NUMBER IN 1889.

	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	Annual Average of 10 years, 1879-1888.	Proportion of deaths in 10 years, 1879-1888.	1889.	Proportion of deaths to 1,000
Smallpox ...	0	2	6	17	110	64	12	0	2	0	21	2.5	0	0.0
Measles ...	169	63	132	150	155	333	119	383	237	191	193	23.0	197	23.6
Scarlet Fever ...	306	123	164	256	326	134	31	39	34	40	145	17.3	156	18.7
Diphtheria ...	71	51	57	49	46	40	46	73	56	40	53	6.3	50	6.0
Whooping Cough ...	384	217	362	319	176	289	253	94	379	235	271	32.3	279	33.4
Fever ...	87	84	66	87	81	84	77	65	78	64	77	9.2	44	5.2
Diarrhoea ...	234	784	341	535	412	737	338	729	550	305	497	59.3	465	55.7
TOTAL ...	1,251	1,324	1,128	1,413	1,306	1,681	876	1,383	1,336	875	1,257	149.9	1,191	142.6
London ...	12,216	13,661	13,811	13,553	10,801	13,629	11,262	11,102	12,684	10,803	12,352	150.8	9,709	128.3

TABLE V.

SUMMARY OF NUISANCES AND OTHER MATTERS REPORTED AND WORK DONE BY THE OFFICERS AND MEN EMPLOYED DURING THE YEAR ENDED DECEMBER 31ST, 1889.

(RETURN MADE BY MR. PARKER, *Inspector of Nuisances.*)

	Nuisances Reported.	Nuisances Abated.
Nuisances remaining on the Books Dec. 31st, 1888 ...	2,843	—
Defective Drains requiring opening and clearing from obstruction ... ..	3,573	3,448
„ Spout Drains ... ..	791	585
„ Drains not efficiently trapped ... ..	734	762
„ Sink Drains requiring disconnection from the Sewer ... ..	411	417
Nuisances arising from the want of drains ... ..	104	97
„ „ „ the want of an efficient supply of wholesome water ... ..	6	9
„ „ „ the keeping of fowls ... ..	374	345
„ „ „ an accumulation of water in cellars ... ..	145	164
„ „ „ the filthy condition of privies... ..	75	111
„ „ „ foul and defective urinals ... ..	614	413
„ „ „ the overcrowding of houses ... ..	55	41
„ „ „ the want of efficient ventilation ... ..	39	16
Swine and Swine Styes so kept as to be a nuisance ...	134	122
Houses reported unfit for human habitation ... ..	54	39
Houses disinfected, cleansed, and purified, where Zymotic disease has occurred ... ..	1,815	1,729
Filthy and unwholesome Houses requiring cleansing and whitewashing .. ..	964	1,151
Defective Houses requiring repairs ... ..	720	703
Accumulations of wash, deposits of offensive matter, manure, &c. ... ..	890	853
Foul Ashpits and Privies requiring repairs ... ..	1,620	1,555
Houses where the Privies and Ashpits belonging thereto are so foul and defective as to require re-construct- ing to Water Closets ... ..	2,482	1,633
Back Yards requiring paving ... ..	609	635
Number of Dangerous Premises reported to the City Surveyor's Department ... ..	617	612
„ Defective Water Taps and Standpipes reported to the Water Department ... ..	638	637
Soil pipes of Water Closets requiring disconnecting from the interior of dwelling houses ... ..	77	66
No. of Cases still on the Books under notice ... ..	—	4,241
Total ... ..	<u>20,384</u>	<u>20,384</u>
Number of Notices issued for the abatement of Nuisances during the Quarter ending December 31st, 1889 ...	17,541	
Number of Cases Summoned ... ..	61	
„ Convicted ... ..	61	
Amount of Costs ... ..	£12 13 8	
„ Penalties ... ..	2 15 0	



## COW SHEDS.

No. of Visits to Cow Sheds	...	...	...	...	...	...	1,675
----------------------------	-----	-----	-----	-----	-----	-----	-------

## MILKSHOPS.

No. of Milkshops Registered during the Year	...	...	...	...	...	...	105
No. of Visits to Milk Shops	...	...	...	...	...	...	3,004

## BAKEHOUSES.

No. of Visits to Bakehouses	...	...	...	...	...	...	919
-----------------------------	-----	-----	-----	-----	-----	-----	-----

## WELL WATERS.

Well Waters submitted for Analysis	...	...	...	...	...	...	72
------------------------------------	-----	-----	-----	-----	-----	-----	----

## SMOKE NUISANCES.

No. of Observations made by the Inspectors	...	...	...	...	...	...	5,095
„ Manufacturers Reported for the emission of dense smoke	...	...	...	...	...	...	313
„ „ Cautioned	...	...	...	...	...	...	172
„ „ Summoned	...	...	...	...	...	...	102
„ „ Convicted	...	...	...	...	...	...	94
Amount of Penalties	...	...	...	...	...	£59 15 0	
„ Costs	...	...	...	...	...	£37 1 0	

## COMMON LODGING HOUSES.

No. of Registered Common Lodging Houses	...	...	...	...	...	...	91
„ Lodgers allowed	...	...	...	...	...	...	2,034
„ Visits by day	...	...	...	...	...	...	12,346
„ Visits by night	...	...	...	...	...	...	2,679
„ Lodgers found occupying the Houses	...	...	...	...	...	...	36,996
„ Houses Registered under the Public Health Act, 1875	...	...	...	...	...	...	132
„ Lodgers allowed	...	...	...	...	...	...	748
„ Persons Summoned	...	...	...	...	...	...	3

## THE CANAL BOATS ACT, 1877, AND 1884.

No. of Canal Boats inspected during the Year	...	...	...	...	...	...	765
„ Canal Boats registered during the Year	...	...	...	...	...	...	34
„ Persons Summoned	...	...	...	...	...	...	2

## SLAUGHTER HOUSES.

(Return made by MR. BIRCKLEY, Superintendent of the Markets.)

No. of Visits	...	...	...	...	...	...	7,096
Voluntary Surrenders of Meat	...	...	...	...	...	...	411
Seizures of Bad Meat	...	...	...	...	...	...	12
Weight Destroyed	...	...	...	...	...	...	68,125 lbs.
Voluntary Surrenders of Fish, &c.	...	...	...	...	...	...	149
Seizures of Fish, &c.	...	...	...	...	...	...	49

## CONTAGIOUS DISEASES (ANIMALS) ACT.

(Return made by MR. BIRCKLEY, Superintendent of the Markets.)

No. of Visits to Railway Stations	...	...	...	...	...	...	1,599
No. of Visits to Cow Houses	...	...	...	...	...	...	366

TABLE VI.

METEOROLOGICAL CONDITION OF THE AIR, AND AMOUNT OF RAINFALL.  
FOR THE YEAR ENDING DECEMBER 31ST, 1889.

Observed at 9-0 a.m. at Oakwood, Acock's Green, by myself and my son, Mr. H.  
GROSVENOR HILL.

The Instruments are about 370 feet above the mean level of the sea.

1889.	Pressure of Air.	TEMPERATURE OF THE AIR.				RAINFALL.		
	Barometer	Reading of Thermometer.				Gauge 1 foot diameter. Receiving surface 3ft. 8in. above the ground.		
		Highest in Shade.	Lowest in Shade.	Range of Tempe- rature in the Month.	Mean Tempe- rature in the Month.	Depth of Rain depo- sited upon a square foot of surface, in inches and parts.	Measure- ment converted into weight per acre.	Number of days on which Rain fell, when 5/100ths of an inch or more was measured.
Months.	Mean Monthly Reading (corrected and reduced to 32 degrees Fahrenheit)							
	In Parts.	Dg. Prts.	Dg. Prts.	Dg. Prts.	Dg. Prts.	In Parts.	Tons.	
January ..	29·700	50·0	19·0	31·0	36·4	0·80	81	3
February ...	29·461	55·5	22·0	33·5	37·1	2·17	219	12
March ...	29·515	59·0	22·5	36·5	40·0	3·32	335	8
April ...	29·462	64·5	33·0	31·5	44·3	3·41	344	18
May ...	29·703	80·5	39·0	41·5	55·2	3·92	396	13
June ..	29·205	81·5	45·5	36·0	61·0	0·65	66	5
July ...	29·533	83·0	41·5	41·5	60·6	2·15	217	9
August ...	29·475	82·0	40·5	41·5	59·1	2·94	297	14
September ...	29·712	77·5	34·0	43·5	55·6	2·52	255	8
October ...	29·308	58·5	31·0	27·5	46·5	3·11	314	18
November ...	29·394	61·0	26·0	35·0	43·7	1·27	128	8
December ...	29·709	53·0	20·5	32·5	37·2	2·29	231	12

PRICES OF COAL, FLOUR, POTATOES, AND BUTCHERS' MEAT,  
AND THE NUMBER OF PAUPERS RELIEVED IN THE PARISH OF BIRMINGHAM  
DURING EACH OF THE FIVE YEARS ENDED MICHAELMAS. 1885-1889.

Years.	Average Prices of Food and Fuel.				PAUPERISM.	
	Coal per ton.	Flour per 224lbs.	Potatoes per ton.	Butchers' Meat per lb.	Weekly Average of Paupers relieved during the Year.	
					In-door.	Out-door.
1889	9/3	20/-	70/-	Beef -/5 Mut'n -/8	2,876	1,591
1888	9/-	20/-	70/-	Beef -/4½ Mut'n -/6½	2,792	2,370
1887	8/2	22/-	82/-	Beef -/4 Mut'n -/6¾	2,778	2,863
1886	8/9¾	19/-	64/-	Beef -/4½ Mut'n -/7	2,552	3,374
1885	10/1½	20/3	91/3	Beef -/6¼ Mut'n -/6¾	2,616	3,697

TABLE VIII.

NEW CASES OF DISEASE COMING UNDER TREATMENT DURING THE YEAR, 1889,  
AT THE FOLLOWING INSTITUTIONS.

DISEASES.	I. General Hospital.	II. General Dispensary	III. Queen's Hospital.	IV. Children's Hospital.	V. The Work- house.	VI. Out-door Pauper Patients.	VII. City Hosptl.	TOTAL.
Smallpox .....	...	...	...	...	...	...	...	...
Measles .....	49	73	...	18	5	104	...	249
Scarlet Fever.....	250	42	6	58	2	125	1,801	2,284
Diphtheria .....	20	15	10	26	3	1	...	75
Whooping Cough ...	28	189	22	724	17	91	...	1,081
Croup .....	24	...	3	38	3	2	...	70
Diarrhœa .....	3,993	168	2,211	966	65	259	...	7,662
Dysentery .....	...	...	1	5	1	3	...	10
Asiatic Cholera .....	...	...	...	...	...	...	...	...
Erysipelas .....	3	45	18	6	9	14	...	95
Continued Fever ...	...	1	...	14	...	11	...	26
Typhus .....	...	...	...	...	...	...	...	...
Enteric or Typhd.	20	40	15	13	13	13	...	114
Relapsing .....	...	2	...	...	...	1	...	3
Febricula .....	36	25	...	53	...	...	...	114
Ague .....	1	...	1	...	...	...	...	2
Rheumatic Fever ...	127	291	21	50	22	122	...	633
Puerperal Fever ...	...	5	...	...	...	...	...	5
Bronchitis & Catarrh	1,760	5,559	1,229	1,513	549	2,131	...	12,741
Influenza .....	...	10	...	...	...	1	...	11
Pleurisy & Pneumonia	391	309	123	178	163	164	...	1,268
Phthisis .....	282	1,739	377	60	334	410	...	3,202
Constl. Syphilis.....	166	153	167	168	117	85	...	856
All other diseases ...	20,310	17,362	16,692	9,648	3,399	4,676	...	72,087
Accidents .....	20,341	236	10,551	159	168	97	...	31,552
Totals.....	47,801	26,264	31,447	13,707	4,870	8,250	1,801	134,140

The above returns are made by (I.)—J. R. Ratcliffe, Esq., M.B.; (II.)—A. Dixon Miller, Esq., L.R.C.P.; A. F. Messiter, Esq., L.R.C.P.; E. Dormer Kirby, Esq., M.D.; and William Richards, Esq., M.B.; (III.)—Walter R. Jordan, Esq., M.B.; (IV.)—A. Max Sully, Esq., L.R.C.P.; (V.)—C. W. Suckling, Esq., M.D., and Jordan Lloyd, Esq., F.R.C.S.; (VI.)—Walter Bowen, Esq., Clerk to the Guardians; (VII.)—N. S. Manning, Esq., F.R.C.S., Medical Superintendent,



TABLE IX.—WATER: RESULTS OF ANALYSES

Date of Receipt of Samples.	DESCRIPTION.	Temp. C.	Total Solid Impurity	Organic Carbon.	Organic Nitrogen.
<b>1889. CORPORATION SUPPLY.</b>					
Jan. 1st	10, Hurst Street.....	6°·7	30·62	·180	·031
Feb. 1st	56, Nelson Street .....	8°·3	29·48	·198	·023
Mar. 1st	2, Betholom Row .....	6°·1	28·88	·210	·043
Apr. 1st	12 Court, New Canal Street .....	9°·0	30·82	·286	·052
May 1st	Corporation Wharf, Holliday Street .....	10°·0	27·72	·209	·049
June 1st	Weston Place, Saint Vincent Street .....	11°·1	26·82	·156	·038
July 1st	37, Lord Street .....	19°·0	24·48	·197	·028
Aug. 14th	Police Station, Ladywood Road ...	16°·7	26·68	·150	·037
Sept. 5th	27, Moseley Street .....	17°·2	30·18	·234	·040
Oct. 1st	34, Barford Road.....	12°·8	26·78	·157	·023
Nov. 4th	4, Severn Street .....	9°·4	31·96	·167	·024
Dec. 11th	3 Court, Clark Street .....	7°·2	28·16	·117	·015
	Average results, 1889 .....	11°·1	29·38	·188	·034
	„ „ 1888.....	10°·2	26·72	·155	·023
	„ „ 1887.....	10°·7	27·93	·158	·027
	„ „ 1886.....	11°·0	27·38	·177	·037
	„ „ 1885.....	10°·7	27·37	·106	·035
<b>WELL WATERS.</b>					
Jan. 8th	68, Bradford Street .....	...	210·80	...	very small
„ 28th	Portland Road Athletic Ground.....	...	27·80	...	very large
Feb. 25th	No. 1. February 25th, 1889 .....	...	102·80	...	large
„ „	„ 2. February 25th, 1889 .....	...	93·80	...	moderate
„ „	„ 3. February 25th, 1889 .....	...	133·20	...	do.
„ „	„ 4. February 25th, 1889 .....	...	106·20	...	very large
„ „	„ 5. February 25th, 1889 .....	...	91·80	...	rather large
„ „	„ 6. February 25th, 1889 .....	...	92·40	...	moderate
Mar. 4th	„ 7. March 4th, 1889 .....	...	52·80	...	very large
„ „	„ 8. March 4th, 1889 .....	...	102·80	...	rather large
„ „	„ 9. March 4th, 1889 .....	...	64·20	...	moderate
„ „	„ 10. March 4th, 1889 .....	...	78·20	...	large
„ „	„ 11. March 4th, 1889 .....	...	67·80	...	moderate
„ „	„ 12. March 4th, 1889 .....	...	106·40	...	do.
„ 11th	„ 13. March 11th, 1889 .....	...	125·80	...	very large
„ „	„ 14. March 11th, 1889 .....	...	86·80	...	large
„ „	„ 15. March 11th, 1889 .....	...	90·20	...	moderate
„ „	„ 16. March 11th, 1889 .....	...	109·20	...	large
„ „	„ 17. March 11th, 1889 .....	...	32·80	...	very large
„ „	„ 18. March 11th, 1889 .....	...	94·20	...	moderate
„ 20th	„ 19. March 18th, 1889 .....	...	164·60	...	...
„ „	„ 20. March 18th, 1889 .....	...	36·80	...	moderate
„ „	„ 21. March 18th, 1889 .....	...	123·20	...	rather large

EXPRESSED IN PARTS PER 100,000.

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contami- nation. (Estimated.)	Chlorine.	Hardness.			REMARKS
					Tempo- rary.	Perma- nent.	Total.	
·002	·286	·318	2,550	1·9	6°·6	9°·7	16°·3	Slightly turbid ; greenish yellow
·001	·330	·354	2,990	1·8	4°·7	11°·3	16°·0	Clear, greenish yellow
·002	·220	·264	1,890	1·7	6°·7	10°·0	16°·7	Slightly turbid ; greenish yellow
·001	·132	·185	1,010	1·5	8°·6	8°·9	17°·5	Turbid, dirty green
·001	·154	·204	1,220	1·7	5°·4	9°·1	14°·5	Slightly turbid, greenish yellow
·001	·220	·259	1,890	1·7	7°·0	7°·1	14°·1	Very slightly turbid, greenish yellow
·001	·154	·183	1,230	1·5	7°·4	6°·4	13°·8	Clear ; greenish yellow
·001	·154	·192	1,230	1·6	4°·3	9°·9	14°·2	Clear ; yellowish green ; very slightly turbid
·001	·110	·151	790	1·7	5°·3	12°·4	17°·7	Yellowish green ; very slightly turbid
·001	·198	·222	1,670	1·8	2°·7	10°·6	13°·3	Yellowish green ; very slightly turbid
·001	·341	·365	3,090	1·9	2°·7	11°·2	13°·9	Very slightly turbid, greenish yellow
·002	·330	·346	2,990	1·8	7°·6	8°·8	16°·4	Clear, blueish green
·001	·219	·253	1,880	1·7	5°·7	9°·6	15°·3	
·001	·229	·253	1,980	1·6	5°·5	9°·9	15°·4	
·001	·272	·300	2,410	1·7	8°·5	12°·4	20°·9	
·001	·228	·266	1,970	1·6	7°·3	9°·8	17°·1	
·002	·206	·242	1,760	1·8	7°·5	9°·5	16°·5	
·002	none	...	0	6·4	...	...	...	Very slightly turbid ; yellowish residue
·013	·22	·231	1,990	2·2	...	...	...	Turbid ; the sediment consists of minute vegetable growths and a few animalculæ
·003	·99	·992	9,600	2·2	...	...	...	Clear
·002	·55	·551	5,190	3·3	...	...	...	Clear
·005	3·96	3·964	39,320	8·8	...	...	...	Clear
·002	2·42	2·421	23,890	8·5	...	...	...	Very slightly turbid, floating particles of white vegetable fungus
·002	1·98	1·981	19,490	4·7	...	...	...	Very slightly turbid, brown vegetable floating particles
·001	1·76	1·761	17,290	4·8	...	...	...	Clear
·002	·22	·221	1,890	3·6	...	...	...	Clear
·001	·66	·661	6,280	3·7	...	...	...	Suspended particles
·001	·77	·771	7,380	4·8	...	...	...	ditto
·007	2·20	2·205	21,730	9·4	...	...	...	ditto
·001	1·54	1·541	15,090	2·7	...	...	...	ditto
·001	2·86	2·861	28,290	5·1	...	...	...	Clear
·002	4·62	4·621	45,890	9·1	...	...	...	Clear
·001	1·54	1·541	15,090	4·1	...	...	...	Clear
·001	1·98	1·981	19,490	4·5	...	...	...	Clear, a few suspended particles
·001	2·42	2·421	23,890	8·8	...	...	...	Slightly turbid, a few suspended particles
·002	none	...	0	2·5	...	...	...	ditto
·001	1·32	1·321	12,890	4·7	...	...	...	Clear, a few suspended particles
·400	5·94	6·269	62,370	14·8	...	...	...	Clear, many suspended particles
·002	·77	·771	7,390	2·7	...	...	...	Clear, many very small suspended particles
·002	6·82	6·821	67,890	10·7	...	...	...	Very slightly opalescent, a few fine suspended particles ; brown on evaporation, brown residue

TABLE IX.—

Date of Receipt of Samples.	DESCRIPTION.		Temp. C.	Total Solid Impurity	Organic Carbon.	Organic Nitrogen.
1889.	WELL WATERS.					
Mar. 20th	No. 22.	March 18th, 1889 .....	...	243.20	...	large
" "	" 23.	March 18th, 1889 .....	...	310.80	...	...
" "	" 24.	March 18th, 1889 .....	...	140.40	...	...
" 26th	" 25.	March 25th, 1889 .....	...	35.60	..	large
" "	" 26.	March 25th, 1889 .....	...	60.60	...	do.
" "	" 27.	March 25th, 1889 .....	...	123.60	...	excess i
" "	" 28.	March 25th, 1889 .....	...	34.80	...	small
" "	" 29.	March 25th, 1889 .....	...	54.40	...	do.
" "	" 30.	March 25th, 1889 .....	...	130.60	...	moderate
Apr. 2nd	Marked	" No. 31. April 1st, 1889 "	...	57.60	...	very small
" "	Marked	" No. 32. April 1st, 1889 "	...	59.60	...	small
" "	Marked	" No. 33. April 1st, 1889 "	...	59.60	...	moderate
" "	Marked	" No. 34. April 1st, 1889 "	...	63.80	...	"
" "	Marked	" No. 35. April 1st, 1889 "	...	62.40	...	very large
" "	Marked	" No. 36. April 1st, 1889 "	...	146.60	...	"
" 11th	Marked	" No. 37. April 10th, 1889 "	...	29.60	...	very small
" "	Marked	" No. 38. April 10th, 1889 "	...	91.60	...	very large
" "	Marked	" No. 39. April 10th, 1889 "	...	62.60	...	large
" "	Marked	" No. 40. April 10th, 1889 "	...	63.80	...	very large
" "	Marked	" No. 41. April 10th, 1889 "	...	74.80	...	"
" "	Marked	" No. 42. April 10th, 1889 "	...	80.60	...	large
" 16th	Marked	" No. 43. April 15th, 1889 "	...	45.60	...	rather large
" "	Marked	" No. 44. April 15th, 1889 "	...	92.60	...	very large
" "	Marked	" No. 45. April 15th, 1889 "	...	57.20	...	small
" "	Marked	" No. 46. April 15th, 1889 "	...	39.80	...	moderate
" "	Marked	" No. 47. April 15th, 1889 "	...	33.40	...	"
" "	Marked	" No. 48. April 15th, 1889 "	...	30.60	...	rather large
" 25th	Marked	" No. 49. April 24th, 1889 "	...	101.60	...	very large
" "	Marked	" No. 50. April 24th, 1889 "	...	91.40	...	"
" "	Marked	" No. 51. April 24th, 1889 "	...	94.60	...	"
" "	Marked	" No. 52. April 24th, 1889 "	...	109.60	...	"
" "	Marked	" No. 53. April 24th, 1889 "	...	88.20	...	rather large
" "	Marked	" No. 54. April 24th, 1889 "	...	84.60	...	large
May 1st	Marked	" No. 55. April 29th, 1889 "	...	82.60	...	"
" "	Marked	" No. 56. April 29th, 1889 "	...	122.40	...	"
" "	Marked	" No. 57. April 29th, 1889 "	...	133.60	...	rather large
" "	Marked	" No. 58. April 29th, 1889 "	...	127.40	...	very large
" "	Marked	" No. 59. April 29th, 1889 "	...	91.20	...	moderate
" "	Marked	" No. 60. April 29th, 1889 "	...	136.70	...	very large
" 7th	Marked	" No. 61. May 6th, 1889 "	...	80.60	...	large
" "	Marked	" No. 62. May 6th, 1889 "	...	124.40	...	very large



Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contami- nation. (Estimated.)	Chlorine.	Hardness.			REMARKS.
					Tempo- rary.	Perma- nent.	Total.	
·002	9·46	9·461	94,290	30·2	...	...	...	Slightly opalescent, with sus- pended particles
·250	7·92	8·126	80,940	23·3	...	...	...	Clear, suspended particles yellow residue
·120	4·84	4·939	48,970	17·0	...	...	...	Clear, numerous fine suspended particles
·010	1·98	1·988	19,560	4·1	...	...	...	Slightly opalescent, very fine particles
·001	3·30	3·301	32,690	4·1	...	...	...	Clear, small suspended particles
·012	5·28	5·290	52,580	12·9	...	...	...	ditto
·001	·88	·881	8,490	1·8	...	...	...	ditto
·002	·44	·441	4,090	4·7	...	...	...	Slightly turbid; small suspen- ded particles
·006	3·74	3·745	37,130	16·9	...	...	...	ditto
none	2·09	2·090	20,580	4·3	...	...	...	Clear
·008	1·65	1·656	16,240	4·4	...	...	...	Pretty clear; many suspended particles
·001	1·98	1·981	19,490	3·9	...	...	...	do.
·001	2·64	2·641	26,090	4·6	...	...	...	do.
·001	2·97	2·971	29,390	3·5	...	...	...	Pretty clear; some suspended particles
none	6·60	6·600	65,680	6·9	...	...	...	do.
·001	·66	·661	6,290	3·3	...	...	...	Clear, numerous suspended particles
·020	1·98	1·996	19,640	18·1	...	...	...	Slightly turbid
·001	2·64	2·641	26,190	9·0	...	...	...	Clear, few small suspended particles
·002	2·20	2·202	21,700	8·1	...	...	...	do.
·002	3·52	3·521	34,900	4·6	...	...	...	Slightly turbid, numerous suspended particles
·001	1·98	1·981	19,490	8·0	...	...	...	Clear, numerous very small suspended particles
·001	·99	·991	9,590	4·5	...	...	...	Very slightly turbid, some very small floating particles
·010	2·42	2·428	23,960	9·5	...	...	...	Very slightly turbid, many suspended particles
·001	1·87	1·871	18,390	3·8	...	...	...	Clear, very numerous fine suspended particles
·001	2·31	2·311	22,790	3·1	...	...	...	do.
·001	none	...	0	1·6	...	...	...	Slightly turbid, numerous suspended particles
·001	·55	·551	5,190	1·4	...	...	...	Clear, numerous fine suspended particles
none	2·31	2·310	22,780	7·7	...	...	...	Clear
none	1·32	1·320	12,880	6·8	...	...	...	Very slightly turbid, a few suspended particles
·001	3·08	3·081	30,490	8·5	...	...	...	Clear, a few suspended particles
·001	3·41	3·411	33,790	4·0	...	...	...	Very slightly turbid, a few fine suspended particles
·002	2·86	2·862	28,300	6·7	...	...	...	Clear a few fine suspended particles
·003	3·85	3·852	38,200	7·5	...	...	...	Clear
·001	3·52	3·521	34,890	6·8	...	...	...	Clear, brownish residue
none	2·97	2·970	29,380	8·4	...	...	...	Very slightly turbid, fine suspended particles
·001	4·73	4·731	46,990	9·6	...	...	...	Clear, very fine suspended particles
·002	6·16	6·162	61,300	10·0	...	...	...	Very slightly turbid, fine suspended particles
·001	3·96	3·961	39,290	7·1	...	...	...	do.
·001	7·92	7·921	78,890	10·5	...	...	...	do.
none	3·08	3·080	30,480	3·1	...	...	...	Very slightly turbid
·001	3·74	3·741	37,090	4·7	...	...	...	Very slightly turbid many fine suspended particles

TABLE IX.—

Date of Receipt of Samples.	DESCRIPTION	Temp. C.	Total Solid Impurity.	Organic Carbon.	Organic Nitrogen.
1889.	WELL WATERS.				
May 7th	Marked "No. 63. May 6th, 1889"	...	172.60	...	very large
" "	Marked "No. 64. May 6th, 1889"	...	138.40	...	"
" "	Marked "No. 65. May 6th, 1889"	...	42.20	...	large
" "	Marked "No. 66. May 7th, 1889"	...	75.60	...	very large
" 14th	Marked "No. 67. May 13th, 1889"	...	62.60	...	rather large
" "	Marked "No. 68. May 13th, 1889"	...	123.20	...	...
" "	Marked "No. 69. May 13th, 1889"	...	161.40	...	small
" "	Marked "No. 70. May 14th, 1889"	...	36.40	...	very small

(continued).

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage Contami- nation. (Estimated.)	Chlorine.	Hardness.			REMARKS.
					Tempo- rary.	Perma- nent.	Total.	
·024	10·12	10·139	101,070	6·1	...	...	...	Clear, many fine suspended particles
·001	6·93	6·931	68,990	8·0	...	...	...	do
·002	1·65	1·652	16,200	1·5	...	...	...	do.
·002	3·96	3·961	39,290	5·4	...	...	...	Very slightly turbid
·001	·44	·441	4,090	1·9	...	...	...	Slightly turbid, many fine suspended particles
·160	4·84	4·972	49,400	11·9	...	...	...	Pretty clear, many fine suspended particles
·001	2·86	2·861	28,290	10·7	...	...	...	Slightly turbid, many suspended particles
·006	·44	·445	4,130	3·8	...	...	...	Turbid, opalescent, fine sus- pended particles



TABLE X.

RETURN FOR THE PERIOD 1ST JULY, 1888, TO 30TH JUNE, 1889, RESPECTING THE VACCINATION OF CHILDREN WHOSE BIRTHS WERE REGISTERED IN THE CITY DURING THE SAID PERIOD.

PARISH.	Number of Births returned in the "Birth List Sheets" as Registered.	Number of these Births duly entered in Columns 10, 11, and 13 of the "Vaccination Register" (Birth List Sheets), viz. :					Number of these Births which remained unentered in the "Vaccination Register" on account (as shown by Report Book) of				Number of these Births remaining neither duly entered in the "Vaccination Register" (cols. 3, 4, 5, and 6 of this Return) nor temporarily accounted for in the "Report Book" (cols. 8, 9, and 10 of this Return).
		Col. 10.	Col. 11.		Col. 13.	Postponement by Medical Certificate.	Removal to Districts the Vaccination Officer of which has been duly appraised.	Removal to places unknown or which cannot be reached; and cases not having been found.			
			"Successfully Vaccinated."	"Insusceptible of Vaccination."					"Had Smallpox."	"Dead, Unvaccinated."	
1	2	3	4	5	6	8	9	10	11		
Birmingham ...	8,053	6,754	18	—	811	56	40	326	48		
Aston (within the City)	5,554	4,355	18	—	661	86	35	249	150		
Edgbaston ( " )	380	330	—	—	22	7	5	13	3		

TABLE VII.

## RAINFALL AND TEMPERATURE IN EACH MONTH AND YEAR FROM 1878 TO 1888.

MONTH.	1878.		1879.		1880.		1881.		1882.		1883.		1884.		1885.		1886.		1887.		Average for 10 yrs. 1878—1887.		1888.										
	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	Rainfall.	Temperature.	No. of days on which 5-faths of an inch or more was measured.	Rainfall.	Temperature.	No. of days on which 5-faths of an inch or more was measured.									
January	1.96	43.2	2.01	32.4	0.69	33.7	0.96	4	28.4	2.41	7	40.5	4.21	14	40.3	3.04	13	43.2	1.98	9	35.9	1.95	12	35.2	2.43	11	34.1	2.16	9	36.7	0.90	7	37.0
February	1.11	40.1	3.68	38.5	3.12	41.0	3.43	13	36.3	2.15	5	41.9	3.53	13	42.4	1.66	11	40.8	3.40	9	42.2	1.21	4	33.2	0.85	4	38.3	2.41	10	39.5	0.91	8	35.1
March	1.17	43.6	0.95	40.7	0.53	41.7	2.37	11	41.0	2.57	6	45.6	1.44	9	35.1	2.74	7	43.1	1.02	7	40.2	3.26	13	38.7	1.99	8	37.9	1.80	8	40.8	2.96	15	37.6
April	2.17	48.3	3.39	43.6	2.35	46.0	0.78	3	44.3	4.18	17	47.0	0.98	6	47.1	1.62	9	44.2	2.99	11	45.8	2.20	9	45.7	1.33	8	43.7	2.20	10	45.6	1.75	10	43.1
May	5.33	54.7	4.26	50.1	1.62	50.6	1.48	7	53.9	3.19	11	52.9	1.38	9	51.5	1.06	7	52.8	2.60	14	48.3	6.31	17	51.3	1.96	10	48.6	2.92	11	51.5	1.03	4	52.5
June	3.37	60.8	6.16	56.0	2.55	56.2	1.74	15	57.9	4.00	15	55.7	3.63	9	57.0	2.32	5	57.4	3.97	9	58.5	1.99	7	56.6	2.45	4	61.3	3.22	11	57.7	2.31	10	56.0
July	0.98	63.7	3.97	59.9	4.80	59.8	1.66	9	62.5	3.83	14	60.0	3.95	11	58.4	2.67	15	61.7	0.51	3	62.3	3.49	15	62.0	1.28	5	65.4	2.71	12	61.5	5.58	22	56.9
August	6.44	62.0	5.72	60.1	0.80	60.9	5.18	16	57.4	2.48	12	59.2	0.61	5	60.5	1.74	4	64.1	3.31	11	56.9	2.17	9	61.1	1.91	8	61.3	3.04	10	60.3	2.63	11	58.8
September	3.15	56.9	3.59	55.6	4.63	58.7	1.65	9	54.4	3.03	9	53.7	5.89	15	55.9	1.19	6	58.5	1.94	10	54.5	3.38	9	57.1	2.45	13	53.5	3.09	11	55.9	1.84	5	54.1
October	3.66	52.2	2.06	49.6	6.38	44.0	3.17	11	45.2	6.61	15	48.9	2.64	12	49.2	1.44	7	48.8	4.61	14	44.9	3.97	16	51.7	2.35	8	44.5	3.69	12	47.9	0.46	3	46.3
November	3.15	39.4	1.98	40.9	2.30	40.1	3.13	16	47.3	4.56	18	42.0	4.47	15	41.9	1.61	8	41.8	3.46	14	41.1	2.08	10	43.6	2.49	15	39.6	2.92	13	41.8	4.95	15	45.8
December	2.44	31.2	1.07	35.3	3.48	41.7	3.40	9	37.9	4.59	18	37.8	1.02	5	40.4	2.43	12	39.5	0.65	4	37.9	4.58	16	35.0	1.78	13	36.9	2.54	11	37.4	2.31	9	39.8
Year	34.93	49.7	38.84	46.8	33.25	47.9	28.95	123	47.2	43.60	147	48.8	33.78	123	48.3	23.52	104	49.7	30.44	115	47.4	36.59	137	47.6	23.27	107	47.1	32.70	128	48.0	27.63	119	46.9





Table of the Number of Deaths occurring in each Street in the City of  
Birmingham during the year 1889.

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
<b>A</b>			Beach Street ...	5	9	Burbury Street ...	2	9
Abberley Street ...		1	Bear Lane ...			Burlington Passage ...		
Abbey Street ...	2	3	Beak Street ...		2	Butler Street ...	2	7
Aberdeen Street ...	4	16	Beatrice Crescent ...			Butler Street South ...		2
A. B. Row ...		3	Beaufort Road ...		3	Butlin Street ...		3
Ada Street ...		6	Bedford Road ...		3	<b>C</b>		
Adam Street ...	2	9	Beechfield Road ...		4	Calthorpe Road ...		4
Adderley Street ...	1	8	Belgrave Road ...	1	9	Cambridge Crescent ...		1
Adelaide St., Deritend ...	2	5	Bell Barn Road ...	3	25	Cambridge Street ...		2
Albany Road ...			Bellis Street ...		5	Camden Drive ...		1
Albert Street, Deritend ...			Bell Street ...			Camden Grove ...		
Albert St., St. Martin's ...		1	Belmont Passage ...	2	4	Camden Street ...	7	30
Albion Street ...	2	2	Belmont Row ...		9	Camp Hill ...	1	5
Alcester Street ...	3	14	Benacre Street ...	4	8	Camp Street ...	1	7
Alexandra Road ...		4	Bennett's Hill ...		1	Canal Street ...		3
Alexandra Street ...	1	7	Berkley Street ...		1	Cannon Street ...		
Alfred Street ...		1	Berners Street ...	2	3	Cape Lane ...		
Allcock Street ...	2	10	Bertram Road ...		1	Cape Street ...		5
Allen's Road ...	1	1	Beswick Street ...		1	Cardigan Street ...	2	9
Allesley Street ...	3	10	Betholom Row ...			Carlisle Street ...		3
Algernon Road ...		3	Birchall Street ...	1	4	Carlton Road ...	1	1
Allison Street ...	6	14	Bird Lane ...			Carlyle Road ...		1
All Saints' Road ...		2	Bishopsgate Street ...	7	26	Carnarvon Road ...		
All Saints' Street ...		1	Bishop St., St. Martin's ...	5	23	Caroline Street ...		1
Alma Crescent ...	2	3	Bishop Street, St. Mary's ...			Carpenter Road ...		1
Alma Street ...		1	Bishop Street South ...			Carr's Lane ...		
Alston Street ...		7	Bissell Street ...	3	9	Cartland Road ...		1
Ampton Road ...		1	Blake Lane ...			Carver Street ...	1	12
Anderton Road ...	1	6	Blews Street ...		6	Castle Street, St. Martin's ...		4
Anderton Street ...	2	14	Blews Street West ...		3	Castle Street, Deritend ...		
Andover Street ...			Bloomsbury ...		1	Catheart Street ...	3	8
Angelina Street ...	3	23	Bloomsbury Street ...	3	20	Cato Street ...	1	13
Argyle Street ...		6	Blueher Street ...		7	Cato Street North ...		7
Armonry Road ...			Blythe Street ...	2	15	Cattell Road ...	2	15
Arsenal Street ...			Bolton Road ...	3	23	Cattell Grove ...	3	6
Arthur Road ...		1	Bolton Street ...	1	4	Cavendish Road ...		5
Arthur Street ...	1	24	Bond Street ...			Cecil Street ...	1	15
Artillery Street ...		2	Bordesley Green ...	3	9	Centre Row ...		
Ashford Street ...		6	Bordesley Green Road ...		4	Chad Road ...		3
Ashley Street ...	1	21	Bordesley Park Road ...	10	19	Chandos Road ...		1
Ashted Row ...	3	9	Bordesley Street ...	3	19	Chapel House Street ...		4
Aston Brook Street ...	2	3	Bow Street ...		15	Chapel Street ...		6
Aston Road ...	5	25	Bowyer Street ...	1		Chapman Road ...		
Aston Street ...	4	6	Bracebridge Street ...	1	8	Charles Arthur Street ...	2	11
Asylum Road ...	3	5	Bradford Street ...	4	12	Charles Henry Street ...	6	30
Athole Street ...		1	Braithwaite Road ...		1	Charles Road ...		
Atlas Road ...		2	Branton Street ...		9	Charlotte Road ...		3
Auckland Road ...		8	Brasshouse Passage ...		1	Charlotte Street ...	1	5
Augusta Street ...		6	Brass Street ...	2	1	Chattaway Street ...	1	4
Augustus Road ...	1		Bread Lane ...			Cheapside ...	6	34
Austin Street ...		3	Bread Street, St. Paul's ...		7	Cheatham Street ...	1	2
Avenue Road ...			Bread St., St. Martin's ...		2	Chequers Walk ...	1	
<b>B</b>			Brearley Street ...	11	44	Cherry Street ...		2
Bacchus Road ...		12	Brearley Street West ...		1	Cherry Wood Lane ...	3	7
Bagot Street ...	1	15	Brewery St., Deritend ...			Chester St., Duddeston ...		4
Bailey Street ...		1	Brcwery St., St. Mary's ...		2	Cheston Road ...		
Baker Street ...	2	4	Brewery St., Duddeston ...			Christ Church Passage ...		
Balloon Street ...			Briekiln Street ...			Church Road, Duddeston ...	1	4
Balsall Heath Road ...		6	Bridge Road ...	1	2	Church Road, Edgbaston ...		1
Banbury Street ...		1	Bridge Street, Nechells ...			Church Street ...		4
Barford Road ...	2	7	Bridge Street Duddeston ...			Claremont Road ...		2
Barford Street ...	11	34	Bridge Street St. Thomas ...			Clarendon Road ...		1
Barford Street South ...			Bridge Street West ...	6	38	Clark Street ...	1	21
Barker Street ...		6	Bristol Road ...	1	8	Claverdon Street ...	4	4
Barlow's Road ...		1	Bristol Street ...	4	8	Claybrook Street ...		1
Barn Street ...	1	8	Broad Street ...	3	13	Clement Street ...	2	5
Barraek Street ...		4	Bromsgrove Street ...	4	18	Cleve Terrace ...		
Barr Street ...	5	26	Brookfield Road ...		2	Clissold Street ...		3
Barr Street West ...			Brook Road ...			Cliveland Street ...		6
Bartholomew Row ...	1	3	Brook Street ...			Clive Passage ...		
Bartholomew Street ...		10	Broom Street ...	1		Clyde Street ...		5
Barwell Road ...		3	Brueton's Walk ...			Coach Yard ...		
Barwick Street ...			Buckingham Street ...		9	Coleman Street ...	2	8
Baskerville Passage ...			Buck Street ...		3	Coleshill Street ...	3	12
Baskerville Place ...			Bullock Road ...			College Street ...		1
Bath Passage ...			Bullock Street ...			Colmore Row ...		1
Bath Row ...	1	10	Bull Ring ...	1	3	Commercial Street ...		1
Bath Street ...	1	9	Bull Street ...		3	Communication Row ...	2	7

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
Congreve Street		2	Eversley Road	3	12	Great King Street	3	21
Constance Road			Exeter Row	1	3	Great Lister Street	10	31
Constitution Hill	2	7	Eyre Street		4	Great Russell Street	7	21
Conybere Street	8	18				Great Tindal Street	4	15
Cook's Hill			F			Greenfield Creseent		
Cook Street	1	7	Factory Road	1	1	Green Lane	7	26
Cooksey Road	3	25	Falconer Road		1	Green's Court		
Cope Street		7	Farm Road		1	Green Street	1	2
Coplow Street	2	12	Farm Street	9	49	Green's Village		
Coralie Street		4	Farquhar Road			Greenway Street	2	18
Corporation Street		1	Fawdry Street			Grosvenor Row		
Cotton Row			Fazeley Street	2	12	Grosvenor Street		
Cotton Street			Fisher Street	2	5	Grosvenor Street West	1	16
Coventry Road	4	48	Fleet Street	3	7	Grove Street		1
Coventry Street	2	9	Floodgate Street	3	11	Guest Street	1	6
Cowper Street	5	4	Florence Street	4	5	Guildford Street	1	5
Cox Street	1	8	Fordrough Lane			Gullet, St. Mary's		
Coxwell Road		5	Fordrough Street	2		Gullet, Deritend		
Crabtree Road	1	13	Ford Street	2	13	Gullet, St. Thomas's		
Cranmore Street	1	4	Forge Street			H		
Cregoe Street	2	9	Forster Street	1	4	Hadley Street		5
Creseent	1	36	Foundry Road	1	4	Hagley Road		15
Creseent Wharf			Fowler Street			Halberton Street		5
Crompton Road	1	1	Fox Street		8	Hall Hill Road		
Cromwell Street	2	28	Francis Road		7	Hall Street		4
Crooked Lane			Francis Street	2	24	Hampton Street	1	8
Cross Street			Frankfort Street		15	Hampton Row		
Cuckoo Road		15	Franklin Street			Handsworth New Road		
Cumberland Street		1	Frank Street		2	Hanley Street	1	5
Curzon Street		8	Frederick Road		4	Hanover Street		3
Cuthbert Road		1	Frederick Street		1	Harborne Road		3
D			Freeman Road		5	Harding St., St. George's		1
Dale End		8	Freeman Street		2	Harding St., All Saints'		2
Darnley Road		2	Freeth Street	2	11	Harford Street		2
Dart Street		1	Friston Street		21	Harrison's Road		
Dartmouth Street	3	29				Hatchett Street	6	27
Darwin Street	8	35	G			Hawkes Street	2	10
Dawson Street			Galton Street		3	Heath Mill Lane	2	11
Dean Street		3	Garbett Street	4	16	Heath Street	4	26
Denbigh Street		2	Garrison Lane	6	25	Heath Street South		1
Dearman Road		4	Garrison Street	3	5	Heaton Street	2	12
Derby Street			Gas Street			Helena Street		1
Devon Street	8	20	Geach Street	2	6	Henenge Street	6	35
Devonshire Street	6	12	Gee Street	1	3	Henley Street	1	12
Digbeth	5	8	Gem Street		3	Henn Street		
Digby Street			George Road		2	Henn's Walk	1	
Dixon Road		2	George Street, Neehells			Henrietta Street		1
Doe Street		3	George Street, St. Paul's		4	Henry Street	2	12
Dolobran Road		12	George Street West	6	19	Herbert Road	3	21
Dolman Street	2	14	Gerrard Street			Hermitage Road		
Don Street	1	6	Gibb Street		1	Hickman Road		3
Dora Road		1	Gillett Road		4	Hick Square		2
Dover Street	1	3	Gladstone Road	1	4	Hick Street		5
Drayton Terrace		1	Glebe Passage			Highfield Road		2
Drury Lane			Glebe Street		4	Highgate Road		4
Duchess Road		2	Gloucester Street			Highgate Place		5
Duddeston Mill Road	3	18	Glover's Road		1	Highgate Street	5	23
Duddeston Row	1	7	Glover Street	3	13	High Park Street		5
Dudley Road	6	23	Godwin Street		6	High Street		4
Dudley Street		1	Golden Hillock Road		7	High Street, Bordesley	1	3
Dugdale Street	2	3	Gooch Street	3	17	High Street, Deritend	3	16
Duke Street		10	Goode Street	1	3	Hill Street		2
Dymoke Street	4	17	Good Knave's End			Hinckley Street		
E			Goodman Street			Hingeston Street	2	21
Eastern Road			Goodrick Street	1	3	Rob Moor Road		
Easy Row			Gopsall Street		11	Hockley Hill		12
Edgbaston Park Road		1	Gordon Street		2	Hockley Pool Road		
Edgbaston Street	2	2	Gosta Green		1	Hockley Street	1	12
Edmund Street		1	Gough Road		13	Holborn Hill	1	8
Edward Road	2	2	Gough Street	1	10	Holland Street		3
Edward Street	1	15	Grace Road		3	Holliday Street	1	14
Elkington Street	2	4	Grafton Road			Hollier Street	3	1
Ellen Street	3	18	Graham Street	1	8	Holloway Head	2	15
Ellis Street	1	3	Grange Road	1	9	Holly Road	1	
Elvetnam Road			Grantham Road		3	Holt Street		11
Emily Street	3	13	Grant Street		6	Hooper Street	1	
Emmeline Street		1	Granville Street	3	10	Hope St. (St. Martin's)	8	23
Enfield Road			Great Barr Street	2	15	Hope St. (All Saints')		1
Engine Street			Great Brook Street	2	12	Horse Fair		2
Erasmus Road	1	8	Great Charles Street		3	Hospital Street	7	52
Ernest Street			Great Colmore Street	6	35	Howard Place		
Erskine Street		3	Great Francis Street	14	30	Howard Street		1
Essex Street	2	6	Great Hampton Row	2	13	Howe Street	5	10
Essington Street	3	8	Great Hampton Street	2	16	Hubert Street	1	1



STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
Humpage Road ...	1	1	Lennox Street ...	4	11	Mill Lane ...		2
Hunter's Laue ...			Leopold Street ...	1	10	Mill Street ...		2
Hunter's Vale ...			Lilly Green ...		2	Milton Street ...	1	3
Hurst Street ...	3	14	Lingard Street ...	1	5	Milward Street ...	1	2
Hutton Street ...	1	4	Link Road ...		3	Minories ...		
Hyde Road ...		7	Lionel Street ...		6	Moat Lane ...		1
Hylton Street ...			Lister Street ...	1	6	Moat Row ...		
I			Little Ann Street ...	1	3	Moillett Street ...		1
Iekniel Port Road ...	6	43	Little Barr Street ...	2	1	Moland Street ...	1	21
Iekniel Square ...	2	11	Little Bow Street ...			Mole Street ...	1	7
Iekniel Street ...	3	19	Little Broom Street ...			Mona Road ...		
Inge Street ...	1	8	Little Charles Street ...			Montague Road ...		1
Ingleby Street ...	3	6	Little Cannon Street ...			Montague Street ...		4
Iukerman Street ...	4	7	Little Cherry Street ...			Montgomery Street ...	1	5
Irving Street ...	4	28	Little Edward Street ...			Montpellier Street ...		2
Islington ...			Little Francis Street ...	1	2	Monument Road ...	3	30
Islington Row ...		6	Little Green Lane ...	10	17	Moore's Row ...		
Ivy Lane ...	2	3	Little Hill Street ...			Moorson Street ...	1	9
J			Little King Street ...	1	3	Moor Street ...		7
Jamaica Row ...		1	Little Shadwell Street ...			Moreton Street ...		2
James Street ...	1		Liverpool Street ...		4	Morville Street ...	1	12
James Turner Street ...	1	8	Livery Street ...		6	Moseley Road ...	1	14
James Wait Street ...		3	Lloyd Street ...		3	Moseley Street ...	6	22
Jenkins Street ...	1		Lodge Road ...	3	23	Mott Street ...		9
Jennens Row ...			Lombard Street ...	6	8	Monntfield Road ...		
Johnson Street ...		2	London 'Prentice Street ...			Monnt Pleasant ...	1	8
Johnstone Street ...		3	Long Aere ...	6	28	Monnt Street, Deritend ...		1
John Bright Street ...			Longmore Street ...		1	Mount St., Winson Green ...		1
K			Long Street ...	1	7	Monnt Street Nechells ...	2	5
Keeley Street ...		3	Lord Street ...	5	11	Musgrave Road ...	2	2
Kelynge Street ...	4	16	Louisa Street ...			Muntz Street ...		8
Kendal Road ...		2	Loveday Street ...	1	4			
Kent Street ...	3	4	Love Lane ...		1			
Kent Street North ...	4	4	Lower Camden Street ...					
Kenyon Street ...	1	9	Lower Dartmouth Street ...	1	1			
Key Hill ...		13	Lower Darwin Street ...		1			
King Alfred's Place ...		1	Lower Dean Street ...					
King Edward's Place ...		1	Lower Essex Street ...	3	14			
King Edward's Road ...	2	23	Lower Fazeley Street ...	2	3	Navigation Street ...		2
Kingscote Road ...	1	1	Lower Henry Street ...			Neehells Park Road ...	3	23
Kington Road ...	1	9	Lower Hurst Street ...	2	11	Neehells Place ...	3	5
King Street ...	3	2	Lower Hurst Street East ...		1	Needham Street ...		
Kyott's Lake Road ...		3	Lower Lawley Street ...			Needless Alley ...		
Kyrwick's Lane ...	3	14	Lower Loveday Street ...		1	Nelson Street ...	1	7
L			Lower Pershore Street ...			Nelson Street South ...		1
Ladypool Lane ...		4	Lower Priory ...			Nelson Street West ...		1
Ladywell Passage ...			Lower Russell Street ...			Netherlands ...		
Ladywell Walk ...	1	2	Lowe Street ...		3	New Bartholomew St. ...	1	
Ladywood Road ...		18	Lower Temple Street ...			New Bond Street ...		
Ladywood Grove ...			Lower Tower Street ...	1	17	New Bridge Street ...		
Lancaster Street ...		7	Lower Trinity Street ...		2	New Canal Street ...	1	6
Lander Street ...			Lower Windsor Street ...			New Church Street ...		
Landor Street ...			Loxton Street ...	2	1	Newdegate Street ...		1
Langley Road ...			Ludgate Hill ...	1	2	New Edmund Street ...		
Lansdowne Street ...		4	Ludgate Hill Passage ...			New England ...		
Larhes Street ...	1	9	Lupin Street ...	1	16	New Hall Hill ...		2
Latimer Street ...		2	Lyttleton Road ...			New Hall Street ...		17
Latimer Street South ...	4	16				New Inkleys ...		
Lawden Road ...	1	5	M			New John Street ...	2	16
Lawley Street ...	4	23	Maedonald Street ...	5	7	New John Street West ...	11	46
Lawrence Street ...	4	11	Main Street ...		13	New Market Street ...		3
Leach Street ...		1	Malvern Hill Road ...		1	New Meeting Street ...		
Lease Lane ...		6	Manchester Street ...	1		New Spring Street ...	1	19
Ledsam Street ...	5	18	Manor Road ...			New Street ...		3
Lee Bank Road ...	6	18	Market Street ...		2	New Summer Street ...	2	19
Lee Crescent ...			Mark Lane ...			Newton Road ...		
Lee Mount ...		2	Marroway Street ...	2	4	Newton Street ...		3
Leek Street ...		2	Marshall Street ...	1	6	Newtown Row ...	7	26
Lees Street ...		3	Martinean Street ...		1	Nile Street ...		
Legge Lane ...		1	Marshall Street South ...		4	Nineveh Road ...		
Legge Street ...		11	Mary Ann Street ...		5	Noel Road ...		1
Lench Street ...			Mary Street ...		1	Norfolk Road ...		1
			Masshouse Lane, St. Mtus ...		2	Norfolk Street ...		
			Masshouse Lane, Edgbsn ...			Norman Street ...	2	7
			Meadow Road ...			Northampton Street ...		
			Meeting House Yard ...			Northbrook Street ...		2
			Melville Road ...			Northumberland Street ...	1	11
			Meriden Street ...	2	4	North Warwick Street ...		
			Metehley Lane ...		1	Northwood Street ...	1	12
			Metehley Park Road ...		1	North Street ...		
			Miles Street ...		8	Norton Street ...	2	7
			Milk Street ...	5	5	Norwood Road ...		2
			Miller Street ...	1	7	Nova Scotia Street ...		3
						Nursery Road ...		1

STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
O			R			Shadwell Street		
Oakley Road		2	Radnor Street		2	Shakespeare Road	3	11
Old Cross Street	1		Raglan Road			Sheffield Road		1
Old Meeting Street		3	Railway Ter., Duddleston	1	10	Sheepte Lane		2
Old Square			Railway Ter., Neehells	1	7	Sheepte Street		6
Oliver Road			Rann Street	1	7	Sheep Street	2	12
Oliver Street		11	Rateliff Place			Sherborne Street	3	14
Oozells Street		1	Rateliff Street			Sherlock Street	5	31
Oozells Street North		4	Ravenhurst Street		12	Shutt Lane		
Orford Road		1	Rawlins Street	2	2	Sidney Road		
Ormond Street		8	Rea Street	1	12	Silver Street		
Osler Street	2	23	Rea Street South	1	1	Sir Harry's Road	1	6
Oughton Place		2	Regent Parade		1	Skinner Lane		
Outlet Road			Regent Park Road	2	1	Skinner Street	1	2
Owen Street		7	Regent Place		1	Slaney Street		3
Oxford Street	3	3	Regent Row		2	Slough Lane		
Oxford Road		3	Regent Street			Smallbrook Street	2	4
Oxygen Street		4	Reservoir Retreat			Smithfield Passage		3
P			Reservoir Road		8	Smithfield Street		2
Paddington Street	3	9	Richard St., Neehells	3	15	Smith Street, St George's	2	16
Pakenham Road			Richard St., St. Paul's		1	Smith Street, Duddleston	1	
Palmer Street	3	5	Richmond Hill Road		1	Snake Street		
Parade		5	River Street		1	Snow Hill	1	9
Paradise Street		1	Robert Road		3	Soho Road	1	
Parker Street		3	Rocky Lane	2	4	Somerset Road		1
Park Lane		4	Rodway Street		3	Somerset Street	1	1
Park Road, All Saints	1	35	Rope Walk			South Road	1	3
Park Road, Edgbaston			Rosalie Street		3	Spark Street		1
Park Street	1	11	Rotton Park Road		3	Speaking Stile Walk		1
Parliament Street	1	4	Rotton Park Street			Speedwell Road		4
Paternoster Row			Rowland Street	1		Spencer Street		4
Paxton Road		3	Rupert Street	3	15	Spiceal Street		2
Pebble Mill Road		1	Russell Street		5	Spon Terrace		1
Peel Street	4	13	Ruston Street	2	8	Spoon Street		
Penn Street, Deritend	1	5	Ruston Street North	3	12	Springfield Street	2	14
Penn Street, Duddleston		2	Rutland Road		3	Spring Hill	1	12
Perrot Street			Ryland Road	1	11	Spring Hill Passage		1
Pershore Road		21	Ryland St., Deritend			Spring Road		3
Pershore Street		3	Ryland St., Ladywood		10	Spring Street		6
Phillip St., Market Hall			S			Spring Vale	2	1
Pickford Street		8	Salop Street	1	1	Stafford Street		3
Piddock Street	1	5	Saltley Road	3	9	Stanforth Street	5	11
Pigott Street		2	Saltley Street	1	6	Stanley Road		1
Pinfold Street			Sampson Road		6	Stanhope Street	1	7
Pitney Street			Sampson Road North	4		Stannmore Road		1
Pitt Street			Sandon Road		1	Station Street	1	2
Pitsford Street	1	4	Sand Pits		5	Stella Street	3	3
Plough & Harrow Road			Sand Street	1		Steelhouse Lane		6
Pope Street	1	11	Sandy Lane	1	18	Stephenson Place		1
Poplar Avenue			Sarah Street			Stephenson Street		
Porchester Street	1		St. Andrew's Road	1	13	Steward Street	4	12
Porthope Road		2	St. Clement's Road		1	Stirling Road		1
Portland Road		3	St. Cuthbert's Road		1	Stoke Street	2	8
Potter Street		3	St. George's Crescent		1	Stone Yard		
Poultry			St. George's Street	1	18	Stoney Lane		
Powell Street		2	St. George's Place		2	Stour Street	4	16
Prescott Street	2	14	St. George's Terrace			Stratford Place		2
Price Street		11	St. James' Place	1	5	Stratford Road	2	7
Priestley Road		3	St. James' Road			Stratford Street		5
Primrose Hill			St. James' Street		10	Stuart Street		7
Prince Albert Street		2	St. Luke's Road	1	11	Suffolk Street		10
Princes Row			St. Mark's Street	3	21	Summerfield Crescent		4
Princes Street			St. Mark's Street West			Summerfield Road		
Princess Road	2	3	St. Martin's Lane		5	Summer Hill		3
Princip Street	3	4	St. Martin's Place		2	Summer Hill Road		1
Priory Road			St. Martin's Row			Summer Hill Street	1	8
Pritchett's Road	2	12	St. Martin's Street		6	Summer Hill Terrace		
Pritchett Street	2	7	St. Mary's Row			Summer Lane	6	32
Proctor Street	2	9	St. Mary's Street		6	Summer Row		3
Prospect Row		3	St. Oswald's Road			Summer Road		7
Q			St. Paul's Square		1	Summer Street		4
Queen Street			St. Peter's Place			Sun Street	1	10
			St. Philip's Church Yard			Sun Street West	2	2
			St. Stephen's Street		1	Sutton Street		4
			St. Vincent Street	2	14	Swallow Street		1
			Scholefield Street	2	15	Swan Passage		
			Scotland Passage			Sydney Road		2
			Scotland Street	1	1	T		
			Scott Street		1	Talbot Street	3	13
			Seymour Street	1	5	Talfourd Street	2	7
						Tauter Street		
						Taylor Street		
						Temple Field Street		



STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases	STREETS.	Zymotic Diseases	Other Diseases
Temple Row ...		1				Worcester Wharf ...		
Temple Row West ...			W			Wordsworth Road ...		1
Temple Street ...			Walter Street ...	7		Wrentham Street ...	2	6
Tenby Street ...	4		Ward Street ...	1	7	Wright Street ...	3	5
Tenby Street North ...	4		Warner Street ...		5	Wrottesley Street ...		1
Tennant Street ...	1	19	Warstone Lane ...	1	8	Wyndcliffe Road ...	2	3
Theodore Street ...	1	5	Warstone Parade ...			Wyndham Road ...		2
Theresa Road ...	1	1	Warwick Passage ...			Wynn Street ...	2	9
Thimble Mill Lane ...		3	Warwick Street ...	3	11			
Thomas St., St. Mary's ...	2	5	Washington Street ...		3	X		
Thomas Street, Deritend ...	1	5	Waterloo Street ...		1			
Thorp Street ...	2	3	Water Street ...		5			
Tillingham Street ...	2	16	Waterworks Road ...	1	10			
Tindal Street ...			Watery Lane ...	7	21			
Tonk Street ...			Weaman Row ...					
Tower Street ...		15	Weaman Street ...	1	10			
Trafalgar Road ...		4	Wellesley Street ...		2			
Trent Street ...	1	5	Wellington Passage ...			Y		
Trevor Street ...	2	7	Wellington Road ...		2			
Trinity Terrace ...		1	Wellington St. W'ns'n Gr ...	1	17	Yardley Road ...		
Trinity Street ...	1	3	Wellington St., Icknield Sq. ...	2		Yew Tree Road ...		
Tudor Street ...	1	10	Well Lane ...			York Passage ...		
Turner Street ...	2		Well Street ...	3	20	York Road ...		3
Tyndall Street ...	3	8	Westbourne Road ...		2	York Street ...		
U			Western Road ...		1			
Unett Street ...	6	21	Westfield Road ...		1			
Union Passage ...			Westley Street ...	1	3	Z		
Union Street ...			Weston Street ...		5			
Union Terrace ...		1	Wharf Lane ...	2	1			
Upper Dean Street ...			Wharf St., All Saints ...	1	3			
Upper Gough Street ...		4	Wharf St., St. Thomas's ...					
Upper Highgate Street ...	2	1	Wharf St., Duddleston ...		1			
Upper Hockley Street ...			Wharton Street ...		5			
Upper Hospital Street ...			Wheeler Street ...	1	9			
Upper Marshall Street ...		3	Wheele's Lane ...		6			
Upper Mill Lane ...			Wheele's Road ...		4	ADDENDOA.		
Upper Priory ...			White Lion Passage ...		1	Canals ...		14
Upper Ryland Road ...		3	White Road ...		4	Railways ...		2
Upper Tower Street ...			Whitmore Road ...	1	1			
Upper Trinity Street ...	1	9	Whitmore Street ...	2	9			
Upper Windsor Street ...			Whittall Street ...		5			
V			Wiggin Street ...		1			
Varna Road ...	1	6	William Edward Street ...		4			
Vaughton Street ...	3	16	William Henry Street ...	1	4			
Vaughton Street South ...		6	William St., St. Thomas' ...	8	19			
Vauxhall Grove ...	1	1	William Street, Deritend ...		5	AT INSTITUTIONS.		
Vauxhall Road ...	1	15	William Street North ...		4	General Hospital ...	6	249
Vauxhall Street ...	2		Willis Street ...	2	13	Queen's Hospital ...	6	145
Vere Street ...		6	Willow Avenue ...			Children's Hospital ...	12	53
Viaduct Street ...			Wilton Street ...	1	7	Workhouse ...	10	617
Vicarage Road ...			Windmill Street ...	4	16	Asylum ...	1	85
Victoria Grove ...		1	Windsor Street ...			Gaul ...		1
Victoria Street ...		4	Winson Green Road ...	3	9	Eye Hospital ...		2
Villa Street ...	2	3	Winson Street ...	1	3	Blind Institution ...		
Villiers Street ...		2	Witton Street ...		1	City Hospital ...	112	1
Vine Street ...		3	Woodbourne Road ...			Homœopathic Hospital ...		9
Vittoria Street ...	2	5	Woodcock Street ...	2	10	Orthopædic Hospital ...		1
Vyse Street ...		4	Wood Street, Ladywood ...		2			
			Wolseley Street ...	3	1			
			Worcester Street ...			TOTALS	1191	7161

Grand Total ... 8352



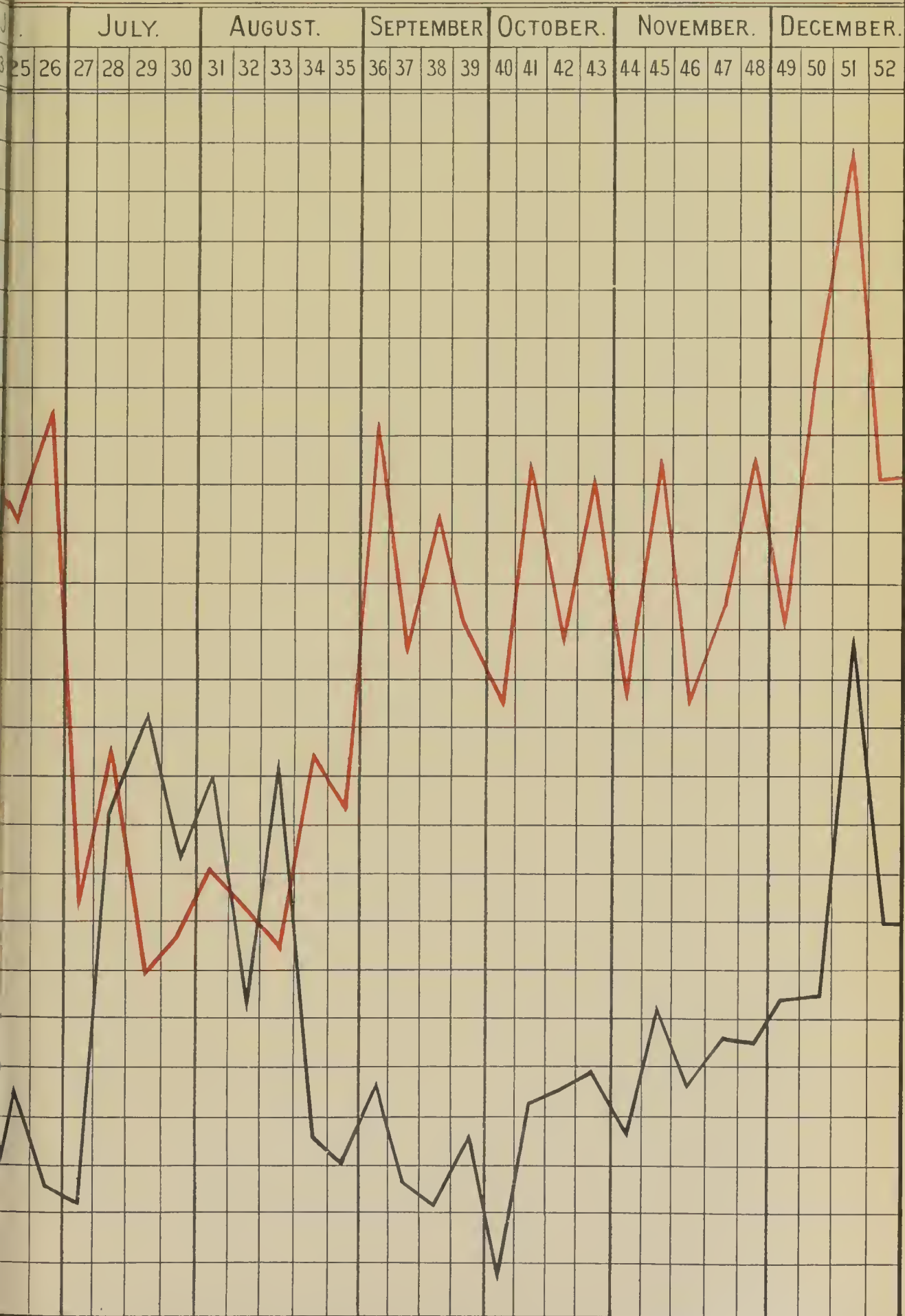






SHEWN IN WEEKLY PERIODS THUS

DEATH







MAP OF THE BOROUGH OF BIRMINGHAM. 1889.

The Borough and Ward Boundaries are shewn thus

*NOTE. THE RED SPOTS REPRESENT THE NUMBER OF DEATHS (156) FROM SCARLET FEVER IN 1889.  
CROSSES " " " " (197) " MEASLES " "  
BLUE " " " " (40) " TYPHOID FEVER " "*



REPORT  
ON  
ADULTERATION.





## CITY ANALYST'S LABORATORY,

THE COUNCIL HOUSE, BIRMINGHAM,

*March 7th, 1890.*

## TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

I beg to report that during the year 1889 I analysed 873 samples of food and drugs.

The following statement shows both the total number of samples of each commodity and the number found to have been adulterated :—

ARTICLE.	TOTAL NO. OF SAMPLES ANALYSED.				NO. FOUND ADULTERATED.			
Milk ... ..	222	...	...	...	42	...	...	...
Butter ... ..	120	...	...	...	38	...	...	...
Bread ... ..	89	...	...	...	3	...	...	...
Oatmeal .. ...	67	...	...	...	2	...	...	...
Flour ... ..	54	...	...	...	0	...	...	...
Coffee ... ..	45	...	...	...	26	...	...	...
Ale ... ..	43	...	...	...	3	...	...	...
Pepper ... ..	43	...	...	...	8	...	...	...
Vinegar .. ...	36	...	...	...	0	...	...	...
Sugar Confectionery	28	...	...	...	7	...	...	...
Mustard .. ...	18	...	...	...	1	...	...	...
Arrowroot ... ..	12	...	...	...	0	...	...	...
Lard ... ..	10	...	...	...	0	...	...	...
Olive Oil .. ...	9	...	...	...	3	...	...	...
Cheese .. ...	8	...	...	...	0	...	...	...
Glycerine ... ..	8	...	...	...	0	...	...	...
Tea ... ..	7	...	...	...	0	...	...	...
Cayenne Pepper ... ..	6	...	...	...	1	...	...	...
Ground Ginger .. ...	6	...	...	...	0	...	...	...
Magnesia ... ..	6	...	...	...	0	...	...	...
Porter ... ..	6	...	...	...	0	...	...	...
Tapioca ... ..	6	...	...	...	0	...	...	...
Saffron ... ..	5	...	...	...	1	...	...	...
Sweet Spirits of Nitre	4	...	...	...	3	...	...	...
Brandy ... ..	3	...	...	...	0	...	...	...
Port Wine ... ..	3	...	...	...	0	...	...	...
Chicory ... ..	2	...	...	...	0	...	...	...
Coffee Berries ... ..	2	...	...	...	0	...	...	...
Cream of Tartar ... ..	1	...	...	...	0	...	...	...
Beaune ... ..	1	...	...	...	0	...	...	...
Gin ... ..	1	...	...	...	0	...	...	...
Margarine ... ..	1	...	...	...	0	...	...	...
Sugar ... ..	1	...	...	...	0	...	...	...
Total	873				138			

The subjoined list shows the nature and extent of the sophistication of the adulterated samples :—

NO.	DATE.	ARTICLE.	REMARKS.
1—Jan. 8th	...	Coffee...	Adulterated with 72% of chicory.
5— " 8th	...	Coffee...	Adulterated with 50% of chicory.
7— " 8th	...	Coffee...	Adulterated with 82% of chicory.
9— " 8th	...	Coffee...	Adulterated with 62% of chicory.
15— " 8th	...	Milk ...	Deprived of 20% of its fat. Cautioned by Health Sub-Committee.
18— " 8th	...	Milk ...	Adulterated with 18% of water. Fined 5/- and costs.
19— " 8th	...	Olive Oil ...	Adulterated with 17% of cotton seed oil. Cautioned by Health Sub-Committee.
20— " 8th	...	Olive Oil ...	Adulterated with 19% of cotton seed oil. Cautioned by Health Sub-Committee.
21— " 8th	...	Olive Oil ...	Adulterated with 19 % of cotton seed oil.
38— " 21st	...	Milk ...	Adulterated with 6% of water. Cautioned by Health Sub-Committee.
39— " 21st	...	Milk ...	Deprived of 40% of its fat. Paid costs.
46— " 24th	...	Butter ...	Consisted of margarine. Summons dismissed.
50— " 25th	...	Butter ...	Consisted of margarine. Fined 5/- and costs.
64— " 31st	...	Milk ...	Adulterated with 8% of water. Cautioned by Health Sub-Committee.
71—Feb. 4th	...	Milk ...	Adulterated with 8% of water. Cautioned by Health Sub-Committee.
73— " 4th	...	Milk ...	Adulterated with 8% of water. Cautioned by Health Sub-Committee.
75— " 4th	...	Milk ...	Adulterated with 10% of water and deprived of 10% of fat. Summons dismissed.
76— " 4th	...	Milk ...	Adulterated with 22.5% of water. Summons dismissed.
77— " 5th	...	Coffee ...	Adulterated with 80% of chicory. Fined 5/- and costs.
88— " 14th	...	Milk ...	Adulterated with 18% of water. Fined £5 and costs.
95— " 18th	...	Milk ...	Adulterated with 14% of water. Fined 10/- and costs.
97— " 18th	...	Milk ...	Adulterated with 11.5% of water. Fined 10/- and costs.
102— " 18th	...	Coffee ...	Adulterated with 79% of chicory.
110— " 25th	...	White Pepper	Contained a little powdered olive stones.
112— " 25th	...	White Pepper	Adulterated with rice meal.
123— " 27th	...	Milk ...	Adulterated with 9% of water and deprived of 30% of its fat. Summons dismissed.
130 —Mar. 6th	...	Milk ...	Adulterated by addition of water and subsequent addition of cream. Cautioned by Health Sub-Committee.

NO.	DATE.	ARTICLE.	REMARKS.
132—	Mar. 6th	Milk	Deprived of 20% of its fat. Cautioned by Health Sub-Committee.
135—	" 9th	Coffee	Adulterated with 77% of chicory. Summons dismissed.
152—	" 18th	Tin Coffee	Adulterated with 58% of chicory.
157—	" 18th	Sugar Confectionery	Contained a little starch and gelatine, and adulterated with 3% of paraffin wax.
162—	" 18th	Oatmeal	Adulterated with barley meal.
163—	" 18th	Tin Coffee	Adulterated with 97% of chicory.
164—	" 18th	Tin Coffee	Adulterated with 64% of chicory.
165—	" 18th	Tin Dandelion Coffee	Adulterated with 90% of chicory.
166—	" 18th	Tin Coffee	Adulterated with 70% of chicory.
167—	" 18th	Tin Coffee	Adulterated with 64% of chicory.
170—	" 18th	Tin Coffee	Adulterated with 84% of Chicory.
179—	" 20th	Butter	Consisted of Margarine. Fined £2 and costs.
181—	" 20th	Butter	Consisted of Margarine. Fined £2 and costs.
183—	" 20th	Butter	Consisted of Margarine. Fined £2 and costs.
184—	" 20th	Butter	Consisted of Margarine. Fined £2 and costs.
188—	" 20th	Butter	Consisted of Margarine. Fined £2 and costs.
189—	" 20th	Butter	Consisted of Margarine. Fined £2 and costs.
190—	" 20th	Butter	Consisted of Margarine. Fined £2 and costs.
191—	" 20th	Butter	Consisted of Margarine. Fined £2 and costs.
228—	April 16th	Pepper	Adulterated with a little olive stone powder
230—	" 16th	Pepper	Adulterated with 50 % of rice starch
231—	" 16th	Mustard	Contained wheat starch and turnerie
251—	May 1st	Milk	Adulterated with 14 % of water. Fined 2/6 and Costs
265—	" 6th	Oatmeal	Adulterated with about 40 % of barley meal Cautioned by Health Sub-Committee
267—	" 8th	Milk	Adulterated with 11.5 of water. Cautioned by Health Sub-Committee
293—	" 22nd	Coffee	Adulterated with chicory
295—	" 22nd	Coffee	Adulterated with chicory
297—	" 22nd	Coffee	Adulterated with chicory
298—	" 22nd	Coffee	Adulterated with chicory
301—	" 22nd	Coffee	Adulterated with chicory
319—	June 3rd	Beer	Contained 31 grains of salt per gallon more than is allowed by the Excise
333—	" 6th	Coffee	Adulterated with 59 % of Chicory. Paid Costs
334—	" 6th	Butter	Consisted of Margarine. Fined 10/- and Costs
338—	" 6th	Butter	Consisted of Margarine. Fined 20/- and Costs
339—	" 6th	Butter	Consisted of Margarine. Fined 20/- and Costs
342—	" 6th	Butter	Consisted of Margarine. Paid Costs
343—	" 6th	Butter	Consisted of Margarine. Cautioned by Health Sub-Committee
344—	" 6th	Butter	Consisted of Margarine. Fined 20/- and Costs
346—	" 6th	Butter	Consisted of Margarine. Fined 20/- and Costs
352—	" 13th	Butter	Consisted of Margarine. Fined 20/- and Costs

NO.	DATE.	ARTICLE.	REMARKS.
389—	July 1st ...	Milk ...	Adulterated with 13 % of water. Fined 5s. and costs
391—	" 1st ..	Milk ...	Adulterated with nearly 8% of water. Cationed by the Health Sub-Committee
410—	" 12th ...	Milk ...	Deprived of 26 % of its fat. Fined 20s. and costs
414—	" 12th ...	Milk ...	Adulterated with 20 % of water. Fined £5 and costs
438—	" 22nd ...	Sugar Confectionery	Adulterated with paraffin wax
440—	" 22nd ...	Sugar Confectionery	Adulterated with paraffin wax
441—	" 22nd ...	Sugar Confectionery	Adulterated with paraffin wax
444—	" 22nd ..	Sugar Confectionery	Contained added starch
446—	" 22nd ...	Sugar Confectionery	Adulterated with paraffin wax
447—	" 25th ...	Coffee ...	Adulterated with chicory
449—	" 25th ...	Coffee ...	Adulterated with chicory
451—	" 25th ...	Coffee ...	Adulterated with chicory
453—	" 25th ...	Coffee ...	Adulterated with chicory
455—	" 25th ...	Coffee ...	Adulterated with chicory
457—	" 25th ...	Coffee ...	Adulterated with chicory
460—	" 27th ...	Fancy Bread ...	Contained a trace of alum
461—	" 27th ...	Fancy Bread ...	Contained a trace of alum
477—	Aug. 26th ...	Sugar Confectionery	Adulterated with paraffin wax
540—	Sept. 5th ...	Milk ...	Adulterated with 8% of water
547—	" 9th ...	White Pepper ...	Adulterated slightly with mineral matter
549—	" 9th ...	White Pepper ...	Contained poivrete
553—	" 9th ...	White Pepper ...	Adulterated with mineral matter
563—	" 11th ...	Milk ...	Deprived of 19 % of its fat
569—	" 21st ...	Bread ...	Contained a trace of alum
574—	" 21st ...	Ale ..	Contained 6 grains of salt per gallon more than is allowed by the Excise
598—	Oct. 8th ...	Milk ...	Adulterated with 17 % of water. Fined 5s. and costs
601—	" 8th ...	Margarine ...	Consisted of Margarine. Fined 20s. and costs
606—	" 8th ...	Milk ...	Adulterated with 11 % of water Fined 5s. and costs
630—	" 29th ...	Ale ...	Contained 6 grains of salt per gallon more than is allowed by the Excise
643—	" 31st ...	Butter ...	Consisted of Margarine
645—	" 31st ...	Butter ...	Consisted of Margarine
656—	" 31st ...	Butter ...	Consisted of Margarine
658—	" 31st ...	Butter ...	Consisted of Margarine
660—	" 31st ...	Butter ...	Consisted of Margarine
694—	Nov. 2nd ...	Cayenne Pepper ...	Adulterated with 33 % of woody fibre
698—	" 2nd ...	Butter ...	Consisted of Margarine. Fined 20/- and costs
699—	" 2nd .	Butter ...	Consisted of Margarine. Fined 10/- and costs
700—	" 2nd ..	Butter ...	Consisted of Margarine. Fined 20/- and costs



NO.	DATE.	ARTICLE.	REMARKS.
709—Nov. 6th	...	Milk	Adulterated with 10% of water. Cautioned by Health Sub-Committee
724— " 12th	...	Milk	Adulterated with 6% of water, and deprived of 10% of its fat. Cautioned by Health Sub-Committee
726-- " 12th	...	Milk	Deprived of 13% of its fat. Cautioned by Health Sub-Committee
729— " 20th	...	Milk	Adulterated with nearly 8% of water. Cautioned by Health Sub-Committee
730— " 20th	...	Milk	Deprived of 18% of its fat
736— " 21st	...	Butter	Consisted of Margarine. Fined 20/- and costs
737— " 21st	...	Butter	Consisted of Margarine. Fined 10/- and costs
746 - " 21st	...	Butter	Consisted of Margarine. Fined 10/- and costs
763— " 27th	...	Milk	Adulterated with 13 % of water. Fined 20/- and costs.
775—Dec. 3rd	...	Butter	Consisted of Margarine
781— " 3rd	...	Butter	Consisted of Margarine. Fined 20s. and costs
784— " 5th	...	Milk	Adulterated with 12 % of water, and deprived of 12 % of its fat. Fined 10s. and costs
794— " 5th	...	Pepper	Adulterated with 4 % of mineral matter
797— " 5th	...	Sweet Nitre	Contained 63 % of Nitrous Ether less than the minimum standard. Cautioned by Health Sub-Committee
799— " 5th	...	Butter	Consisted of Margarine. Fined 20s. and costs
801— " 5th	...	Butter	Consisted of Margarine. Fined 20s. and costs
802— " 5th	...	Butter	Consisted of Margarine. Fined 20s. and costs
803— " 5th	...	Milk	Adulterated with 5 % of water
822— " 11th	...	Milk	Adulterated with 18 % of water. Fined £5 and costs
823— " 11th	...	Milk	Adulterated with 18 % of water. From same consignment as the preceding sample
824— " 11th	...	Milk	Adulterated with 12 % of water. Find £2 and costs
825— " 11th	...	Milk	Adulterated with 8 % of water. Cautioned by Health Sub-Committee
827— " 11th	...	Milk	Adulterated with 6 % of water. Cautioned by Health Sub-Committee
855— " 31st	...	SweetSpirits of Nitre	Adulterated with 50 % of water, and contained only a trace of Nitrous Ether Fined £2 and costs
856— " 31st	...	Saffron	Adulterated with 25 % of mineral matter and 55 % of dyed Calendula florets. Fined £3 and costs
858— " 31st	...	SweetSpirits of Nitre	Contained 64 % less Nitrous Ether than the minimum standard. Cautioned by Health Sub-Committee
860— " 31st	...	Milk	Adulterated with 38 % of water. Fined 20s. and costs.
862— " 31st	...	"Skimmed" Milk	Adulterated with 9 % of water. Cautioned by Health Sub-Committee
863— " 31st	...	Butter	Consisted of Margarine Fined 10s. and costs.

NO.	DATE.	ARTICLE.	REMARKS.
865—	Dec. 31st ...	Milk ...	Adulterated with 7 % of water and deprived of 9 % of its fat. Vendor absconded
867—	" 31st ...	Butter ...	Consisted of Margarine. Fined 10s. and costs.
871—	" 31st ...	Butter ...	Consisted of Margarine. Cautioned by Health Sub-Committee
872—	" 31st ..	Butter ...	Consisted of Margarine. Fined 20s. and costs
873—	" 31st ...	Milk ..	Adulterated with 40 % of water. Fined 1s. and costs

In the subjoined Table will be found the number of articles analysed, and the percentages of adulteration, in some chief classes of food and drugs in each of the past seventeen years.

Years.	Number of Samples Analy-sed.	Total Per-centage of Adul-teration	Percentage of Adulteration of undermentioned Articles.								
			Milk.	Bread and Flour.	Butter.	Gro-ceries.	Wines.	Beer.	Spirits.	Drugs.	Other Articles
1873	87	65	75	0	0	87	—	—	—	100	100
1874	79	42	67	0	66	16	—	0	100	—	—
1875	73	38	55	0	—	36	100	—	—	25	—
1876	92	33	30	—	—	19	—	33	25	36	62
1877	176	40	58	0	—	12	—	21	36	26	31
1878	158	21	57	0	0	10	0	13	26	—	—
1879	168	25	60	0	0	5	—	16	—	—	0
1880	178	21	46	0	0	0	—	0	—	—	0
1881	197	23	54	0	36	8	—	0	50	0	0
1882	321	18	36	0	25	10	—	0	—	—	0
1883	151	38	47	0	30	42	100	17	29	100	—
1884	816	21	41	1	40	23	—	0	40	21	0
1885	914	13	24	0	40	22	—	2	0	7	0
1886	876	9	18	0	23	10	—	6	20	—	0
1887	818	12	15	0	52	12	—	1	0	0	40
1888	753	11	18	0	20	8	—	14	0	0	23
1889	873	16	19	2	32	14	0	6	0	16	27

One hundred and thirty-eight of the samples analysed last year were not of the proper quality; the percentage of adulterated samples has risen from 11 in 1888 to 16, a higher figure than in any year since 1884.

Of the 222 samples of Milk 42, or 19 per cent., had been <sup>Milk.</sup> tampered with; in some cases water had been added and cream taken off, in others one of these methods of sophistication only had been employed. One sample was found to have been adulterated with water, and to disguise the fact an indefinite amount of cream had been added afterwards.

As many as 120 samples exposed for sale as Butter were <sup>Butter.</sup> examined, and 38 of them proved to be Margarine. In a number of cases the sellers declared the samples to be Margarine, but, contrary to the provisions of the "Margarine Act," no label was attached. A sample was also bought as Margarine which was not properly labelled.

Twenty-six samples of so-called Coffee were mixtures of <sup>Coffee.</sup> that article with Chicory, a much cheaper substance; in one case the chicory amounted to 97 per cent.

Eight samples of Pepper had been adulterated, two with <sup>Pepper.</sup> rice meal, three with mineral matter, and three with powdered olive-stone.

Six Samples of Sugar Confectionery contained paraffin <sup>Sugar</sup> wax, a quite indigestible substance, and a sample of Liquorice <sup>Confectionery.</sup> was largely composed of starch.

Three of the samples of Olive Oil were adulterated with <sup>Olive Oil.</sup> cotton-seed oil, three of the Breads contained traces of alum, <sup>Bread.</sup> two of the Oatmeals barley meal, and three of the Ales an excess <sup>Oatmeal.</sup> of salt. <sup>Ale.</sup>

Three of the samples of Sweet Spirits of Nitre were much <sup>Sweet Nitre.</sup> below the strength required by the British Pharmacopœia, and one of the Saffrons had in it only 20 per cent. of that substance, <sup>Saffron.</sup> the remainder being made up of mineral matter and dyed calendula florets; one sample of Cayenne Pepper contained <sup>Cayenne</sup> woody fibre, and one of Mustard was largely adulterated with <sup>Pepper.</sup> starch and coloured with turmeric. <sup>Mustard.</sup>

The remaining samples analysed were genuine, or nearly <sup>Miscellaneous</sup> so. <sup>Articles.</sup>

I remain,

Mr. Chairman and Gentlemen,

Your obedient servant,

ALFRED HILL, M.D., F.I.C.,

*City Analyst.*





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